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A REMEDY FOR PROFESSIONAL UNREST *

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It is worth while to examine briefly some of the factors of the problem presented by the unsatisfactory relationship between the medical profession and the public and, if possible, find a true solution.

The concrete things that seem to underlie our troubles are (1) the various manifestations of what has come to be known as "state medicine," and (2) the extraordinary growth and popular endorsement of the healing cults. Two general social movements are discernible when one examines the problem; and the actions and reactions engendered by these movements have for the moment erected a specter, which too many of us have mistaken for an issue—the medical profession versus the people.

These two social movements are based on the most primitive biologic attributes. The people are engaged in the primordial task of seeking for the good. Since the first man felt hunger and, finding food, satisfied it; since the first man felt the sweat of labor, and, finding an easier way to obtain bread, grasped it, mankind has been at the task of seeking after good, and, finding good, seeking to make it better. And the way of mankind has from the beginning been the experimental way; for century on century men have cut and tried. That which men have rudely shaped to fit their needs, they have compared with the more cunning workmanship of their neighbors, and slowly, the better has supplanted the good. This is law; it was law for the first man, and it is law for the race. This we all know—but all forget.

"STATE MEDICINE"

That portion of humanity which forms our environment is making some new experiments just now. The social organism has many an ancient hunger and thirst that it has never been able to appease with the incomplete ration it has had to feed on hitherto; it has suffered many a wound and bleeding sore which, through the ages, it has vainly sought to cure, and for which it has suffered many things of many physicians. We witness the ancient process of cut and try; sometimes we engage in it; sometimes we are amused by it; sometimes we feel it. Maternity bills, health insurance schemes, public health institutes, social hygiene centers, rural sanitation commissions, child welfare stations, societies for the prevention of this and that, these are the "state medicine" cut and trys that we feel.

This brings us to the other social movement, which, when it strikes the great current of the people's movement, causes the specter that some call an issue to uprear. It is the counter movement of the organized medical profession, and it is based on another primitive biologic attribute—fear.

We physicians are a conservative lot. No matter what our origin, we no sooner graduate and become established in something of a business than we become apostles of the true doctrine of things just as they are; or, if not, then of things somewhat better—for us. We become, in habit of mind, aristocrats, givers of the law to those without, holders of a vested interest, and, true to the type, afraid of any movement that threatens the status quo. True, we are the custodians and interpreters of a certain store of the accumulated knowledge of mankind; but the store belongs to mankind, it is the property of society. We may expect, and properly so, to be called on to speak with what measure of authority we possess when society demands our witness; when society decides to apply in the old cut and try fashion some of that knowledge for its own needs.

Our duty is to act out our part as members of the social body, contributing counsel and advice in the formulation of the protocols for social experiments, and supporting or opposing legislation designed to put them into effect in accordance with our judgment and conscience. But when, as an organized profession, as a group animated by class consciousness, we constitute ourselves into a political bloc and seek to stem the tide of a social stream, we do violence both to our intelligence and to our convictions. We do violence to our intelligence because, if we apply our hearts unto wisdom, we shall realize that we are ourselves only one of the experiments of mankind by which humanity seeks to supply a need; we are only one of the methods of cut and try, and we came into being not because in the cosmic order an inviolable estate was created in which we may of right dwell unmolested, but because mankind has thus far tolerated us as the best experiment hitherto achieved by the race. Society is now meditating on new experiments; we have been useful in the familiar ways, but we have failed to be of use, or of the greatest use, in manners and for purposes for which society deems new methods desirable. Our profession is an instrument, which is going to be modified in whatever fashion the social organism finds expedient, or cast away if some better instrument can be devised. We are clay in the potter's hands, and shall we undertake to say to our Maker, "Why madest thou me so?"

* Presidential address, read before the Medical Society of the District of Columbia, Dec. 14, 1921.

We do violence to our convictions because we permit ourselves to be dominated by fear in the presence of a specter; we organize our fears into a delusion and call the specter an issue, and many summon us to sally forth and do battle with a phantom. Some name the phantom paternalism; some name it socialism; others, more frightened, give it the worst name they can think of: bolshevism; but they all think they see the same thing, whose true name is Something-that-will-affect-adversely-our-private-interests. Whatever it is that society has in mind to do will be done whether it affects our private interests or not; the social organism is on the move in obedience to primeval instinct, and the equally instinctive and self-protective reaction of our little minority can no more stay the tide than did King Canute. Our convictions should instruct us that, whatever readjustments are in the making, we are indispensable to humanity. Have we not in our possession all of truth and eternal value yet attained by man in the science that we represent, and will not society require it at our hands? There is no issue between the medical profession and the public; we are frightened by a specter. The issue is solely one of policy to be settled by citizens; the duty of physicians, as such, is to minister to the sick and respond to the needs of society, whose servants we are.

THE HEALING CULTS

What shall we say of the healing cults? They are plagues sent on us for our sins; and not on us only—they are plagues on society as well. Society is plagued with them because of ignorance, credulity, cupidity, prejudice and such like sins, but with those we are not at present concerned. The fact is, though, that society has in many of its units found the medical profession as we exemplify it wanting; the popularity of the cults represents the individual experiments of these units of society in their search for the good; if they had not felt the need, the experiment would not have been undertaken.

Our duty under the circumstances, it seems to me, is self-examination, with minds humbled in the presence of our failures. It does not suffice to comfort ourselves with the thought that we represent the best that has been attained in medicine, nor to take refuge in the thought of what society already owes our profession. It does not become us cynically and haughtily to watch unmoved the pitiful groping of our fellow men for good which they have not found at our hands. As good physicians and honest men we must examine ourselves and our methods; we must determine wherein we fail the public, and we must, as servants of society, find a way to help our fellow men, ignorant, wilful and superstitious as they often are, in ways that they will follow, and speak to them in language they can understand.

TWO DIVISIVE FAULTS

I said that the cults were plagues on us for our sins, but I did not enumerate the sins. There are two, it seems to me, that stand out as divisive faults, separating us from our fellow men and our full duty to them; they are pride and materialism.

Why do I speak of pride? Have we not a right to be proud of our calling, its history, its attainments and its contributions to mankind? Yes; but pride of that which lacks of perfection must be tempered with humility. Pride has taken hold on us in the name of science; we have been led up into a high mountain, and shown all the kingdoms of the earth, which should be ours if we would serve only science. Our schools taught us the ritual of science; we were indoctrinated with the scientific method and informed with the scientific mind; we were taught to scorn the empiric and to doubt the empirical. When we had satisfied our teachers as to our training, we were dubbed Knights of Science and bade to go forth and conquer the kingdoms we had viewed from the high mountain. But, alas, pride deceived us; the weapons of science alone could not avail to conquer those fair kingdoms and subdue them. Citadels there were still impregnable to our arms; beleaguered people whose deliverance we could not compass by the devices of science. The realm still had strongholds impenetrable except with the weapons of art. What wonder that we attack reluctantly under the banner of art, whose leadership we have been taught to flout? What wonder that we fight but ill when we wield unaccustomed weapons newly tried on the field of combat? What wonder that captives in those strongholds cheer on those hardy knights with strange device who seize the weapons of art, and, unmindful of dangers they know not of, attack and attack and attack? And if, under the attack, the walls fall, one can understand the cheers of those going down in the ruins, cheering the champions who dared in their behalf.

The fields which we may invade only under the leadership of art are still many and wide. Our friends the homeopaths understand this; they have tempered their pride with humility, and enter the warfare equipped by both science and art. This, I believe, is the secret of their strength and their continued life.

Our friends the osteopaths seem to be learning that their art needs to be informed by science, and they show a disposition to set their house in order.

But the lesson we need to learn is the lesson of humility, which is the work meet for repentance for the sin of pride. Our science is not yet sufficient for the needs of the people; we should, therefore, cultivate anew, positively and aggressively, the study and application of empirical art, and we should encourage by our example and approval the development among us of those who, guided by scientific training and safeguarded by scientific traditions and associations, practice those elements of good which must inhere in the methods of the cults. Unless we are willing to do this, we must needs be silent, and continue to grow in symbiosis with whatever healing agencies society may choose to tolerate.

Materialism is the second sin in my indictment. Its origin and rise are well known; it is a product of the scientific era, and there may be significance in the fact that its label bears the words "Made in Germany." It came to be worn as the garb of scientific men; it was fashionable, and scientific men must no longer appear, in public at any rate, in any of the old garments of faith. Thus it has pervaded our profession, has taken hold on our teachers and leaders, and has had its unlovely effect on our professional creeds, our professional practices, and our personal lives. It is in its nature a divisive fault, separating us often from the sympathy and understanding of that host of the afflicted, sick with those diseases whose etiology lies in hopes deferred, in fears and doubtings, in shattered faiths, and in bleeding hearts. What has materialism to offer to these, either in diagnosis or in advice? Thrown back from us disappointed, they turn to those miserable improvisations which we know as Christian science, new thought, unity and the rest.

Belatedly and reluctantly we seek to expand the scope of our materialistic vision, and we recognize that human lives do consist of more than bodies and organs; that there is a spirit to be reckoned with, and we begin to formulate materialistic laws for the behavior of that spirit; it is a thing to be caught and labeled in dreams, to be sublimated like a chemical, or analyzed like a mineral; and if it is sick, poisoned by its own selfishness or wounded by the selfishness of others, shut up in the dungeons of fear or despair, it will be directed to lift itself out into "the glorious liberty of the Children of God" by its own bootstraps according to the materialistic formula of a medical analyzer and labeler.

Materialism has affected our professional practices and personal lives in manners that I shall not dwell on: that it is not pleasant to dwell on. They are manners that alienate us from the people, who, after all, have a pathetic faith in us; it survives their experiences of us, and they continue their faith in hope. How do we justify that faith and hope, when we examine ourselves by this composite picture of what they wish in the doctor? It is a pen picture by Henri Frederic Amiel, written in *Journal intime*, 1873:

> Why do doctors so often make mistakes? Because they are not sufficiently individual in their diagnoses or their treatment. They class a sick man under some given department of their nosology, whereas every invalid is really a special case, a unique example. How is it possible that so coarse a method of sifting should produce judicious therapeutics? . . .
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> The principal grievance which I have against the doctors is that they neglect the real problem, which is to seize the unity of the individual who claims their care. Their methods of investigation are far too elementary; a doctor who does not read you to the bottom is ignorant of essentials. To me the ideal doctor would be a man endowed with profound knowledge of life and of the soul, intuitively divining any suffering or disorder of whatever kind, and restoring peace by his mere presence. Such a doctor is possible, but the greater number of them lack the higher and inner life, they know nothing of the transcendent laboratories of nature; they seem to me superficial, profane, strangers to divine things, destitute of intuition and sympathy. The model doctor should be at once a genius, a saint, a man of God.

THE POLICY OF SERVICE

What, then, is the policy I would recommend that this society adopt in the presence of the problems we have been considering? It is the policy of service. Recognizing the medical profession as the creature of society, our duty is to seek the good of the social whole, knowing that our ultimate good is wrapped up with it. The seeking of excellence in methods, morals and manners is our corporate task, in order that mankind may find blessing at our hands; for the seeking of excellence is the great task of humanity itself.

Our preoccupation should be the correction of those defects in the social organization and in our own resources which provoke in society the maladies now discernible. We do ill to ourselves and to society if we yield to fear and spend our energies in vain strife to maintain institutions and practices which society is determined to modify. We may need to stand together for justice in the days that are to come; we may need to witness strongly for truth; but we shall not have to fight for existence so long as we follow the path of Service; "for whoso thinketh to save his life shall lose it; but whoso loseth his life for My sake, shall find it."

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BENIGN LESIONS OF FEMALE BREAST FOR WHICH OPERATION IS NOT INDICATED*

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It seems almost incredible, yet it is true, that in the last 100 women whom I have seen because of some complaint referred to one or both breasts, in more than one half, after a history and careful examination, operation has been advised against. The cases to date total 267; the majority were observed during the last five years. They have been designated B. B. N. O. (breast; benign; no operation), and will be considered in eleven groups: (1) pain, 64 cases; (2) painful scar, 22 cases; (3) discharge from the nipple, 36 cases; (4) retraction of the nipple, 3 cases; (5) lesions of the nipple suggesting Paget's disease, 3 cases; (6) history of disappearing tumor, 24 cases; (7) definite and indefinite, single and multiple tumors in women under the age of 25, 23 cases; (8) definite and indefinite, single and multiple tumors in women over 25, 64 cases; (9) tumors in the axilla—aberrant breast tissue, lipoma, lymph glands, tumors of the sebaceous and sweat glands, 17 cases; (10) unilateral hypertrophy at puberty, 12 cases; (11) diffuse virginal hypertrophy, 3 cases.

CLINICAL PICTURE IN DIFFERENT GROUPS

1. *Pain.*—Fifty patients presented themselves complaining of pain only, and the result of the examination was negative.

Fourteen patients complained of pain, and a tumor had been felt by the patient or the examining physician or by both, but on careful examination I could not make out any tumor.

The study of these sixty-four cases of pain in the breast, combined with that of patients who have been operated on for benign and malignant tumors of the breast, teaches us that pain is not an indication of a pathologic lesion in the breast indicating operation. The only compensation for pain in the breast is that it influences the patient to seek an examination, and in some instances a tumor may be found earlier, or, if there is no tumor, the patient may receive instructions which will be helpful in the earlier recognition of a tumor, should one develop.

All the different types of pain in the breast have been investigated—intermittent, continuous; localized, diffuse, radiating; unilateral, bilateral; its relation to infancy, puberty, lactation, mastitis, menstruation and menopause—with the result already stated: pain, of itself, is not of diagnostic value.

The best treatment for pain in the breast is to assure the patient, after a careful examination which has excluded the presence of a tumor, that it is not a sign of cancer, and that she runs no more risk of cancer than any other woman of her age who has no pain.

2. *Painful Scar.*—These twenty-two cases comprise only those patients whose operations were performed by other surgeons. When compared with painful scars after our own operation, it can be emphatically stated that pain in the scar is not, of itself, an indication of a recurrence, nor that there is anything in the area of the healed wound which requires operative treatment. The treatment should be largely psychic. Painful scars

* Read before the Southern Surgical Association, Pinehurst, N. C., Dec. 13, 1921.

are more common after the excision of the breast than after the excision of a tumor or the complete operation for cancer.

3. *Discharge From the Nipple.*—In addition to the thirty-six cases in which operation has not been performed, we have studied the significance of discharge from the nipple, when present, in all the benign and malignant tumors of the breast operated on and in which the pathology of the lesion was established.

From this study one may state that discharge from the nipple, like pain, is not an indication of a lesion of the breast for which operation is indicated. In malignant tumors of the breasts, such a discharge previous to the palpation of the tumor has been recorded in about 1 per cent. of the cases. In all benign tumors the percentage is a little larger. In the benign papillomatous cysts this discharge has been the symptom of onset in more than 50 per cent. of the cases.

The probabilities are that a discharge from the nipple of a character other than milk is due to a small papilloma in a duct (discharge bloody or serous) or dilatation of the ducts beneath the nipple when the discharge is thicker and brownish or yellowish. A discharge of milk indicates a galactocele or persisting lactation hypertrophy. There is no evidence that these lesions are precancerous, and the prevailing view that a woman with a discharge from the nipple should be protected from cancer by the removal of the breast is based on fear and not on fact.

4. *Retraction of the Nipple.*—When retraction of the nipple is of recent origin and not associated with a history of lactation, it should be looked on as a sign of cancer and the complete operation performed. Retraction of the nipple as a symptom of onset of cancer of the breast is rare. It may be associated with benign tumors, chronic cystic mastitis, lactation mastitis, and the rare type of mastitis not associated with lactation. But it is safer to look on recent retraction of the nipple in which there is no demonstrable benign etiologic factor as a sign of cancer.

In the three cases discussed here, the unilateral retraction was of long duration and coincident with lactation.

Unilateral or bilateral congenitally depressed nipples can be distinguished from retraction of the nipple only when the patient is certain that the condition has been present for years.

5. *Lesions of the Nipple Suggesting Paget's Disease.*—Any warty condition of the nipple associated with scaling, discharge or ulceration; any irritation of the nipple with redness or weeping; anything suggesting eczema or ulceration of the nipple, which does not heal within a few weeks after simple measures of cleanliness and protection, should be looked on as Paget's disease and be treated by complete excision of the breast. If, on palpation, there is any induration beneath the affected nipple, any palpable mass in the breast, the complete operation for cancer should be performed without delay.

The three cases mentioned here healed so rapidly under simple treatment that operation was not performed.

6. *History of Disappearing Tumor.*—In my opinion, this is a definite clinical entity, and the tumor is associated either with a chronic lactation mastitis, a galactocele or with chronic cystic mastitis. When we study cancer of the breast, in less than 1 per cent. is there a history of disappearing tumor before the development of the permanent tumor—cancer. This would correspond somewhat to its rare occurrence in the lesions above described.

When we study the records of lactation mastitis, galactocele and chronic cystic mastitis, we find the statement of a disappearing tumor in a significantly large proportion of the cases—up to almost 20 per cent. in chronic cystic mastitis; and as many of the older histories are incomplete as to these data, there is every reason to conclude that the disappearing tumor is more common. When we follow the patients operated on for chronic cystic mastitis who have one or both breasts remaining, the later development of the disappearing tumor is quite frequent. The relative frequency of the history of a disappearing tumor in patients operated on for an encapsulated adenoma is about in the proportion of the probable occurrence of chronic cystic mastitis in women of the same age.

There is also some evidence that the benign adenoma observed in young girls may, if left alone, ultimately disappear.

The nomenclature for definite and indefinite tumors is as follows: (*a*) single definite tumor in one breast; (*b*) single definite tumor in each breast; (*c*) multiple definite tumors in one breast; (*d*) multiple definite tumors in both breasts; *a-e*, *b-e*, *c-e*, *d-e* indicate that the tumors are indefinite.

7. *Definite and Indefinite, Single and Multiple Tumors in Women Under 25 Years of Age.*—In this group there were twenty-three cases.

(*a*) Single, definite, freely movable tumor in one breast, all in girls under 20 years of age, twelve cases. Seven of these have been followed from three to nineteen years, and the tumors have disappeared. This suggests that adenoma in the breast of a young girl may ultimately disappear.

(*a-e*) Single, indefinite areas, four cases. All were followed for years, and the areas have disappeared.

(*c*) Multiple definite tumors in one breast, two cases. In both, the tumors disappeared.

(*c-e*) Multiple indefinite tumors in one breast. No cases of this type have been observed.

(*d*) Multiple definite tumors in both breasts, one case. I examined this patient eighteen years ago and concluded that the tumors were adenomas. They have since disappeared.

(*d-e*) Multiple indefinite tumors in both breasts, four cases. Subsequent examinations revealed that the areas have disappeared.

This demonstrates that the possibility of definite and indefinite, single and multiple tumors in one or both breasts in women from the age of puberty to 25 may occur, but certain types are rare.

In view of the fact that I cannot find an authentic case of cancer in the breast of a woman under 25 years of age, it seems just to conclude that there is no danger in observing a definite single tumor, or multiple definite tumors in one or both breasts. To be on the safe side, I have reduced the age limit to 20 years.

The indication for operation on a single tumor or multiple definite tumors in one or both breasts in a girl 20 years or less of age is: size, recent rapid growth, extreme pain and prospect of early marriage.

8. *Definite and Indefinite, Single and Multiple Tumors in One or Both Breasts in Women Over 25 Years of Age.*—In this group there were sixty-four cases.

(*a*) A single, definite tumor in one breast; no operation; seven cases. The operation was postponed in

spite of the fact that a single, definite, palpable tumor was present in a woman, aged 25; in three cases, because the tumor was felt in a lactating breast and was thought to be a galactocele; in one, because there was a history of the removal of a simple cyst, and in one case the small palpable tumor beneath the nipple was wormlike and suggested a dilated duct.[1]

The tumors in these five cases all disappeared, and there has been no further trouble.

The remaining two patients refused operation. In one the tumor had been diagnosed in 1892 as cancer. It disappeared in a few months, and there has been no recurrence in twenty years. The other was diagnosed a subepidermal dermoid. This patient has been lost track of.

This demonstrates that during a period of about thirty years, in almost 3,000 cases of breast lesions, I have records of but five cases in which operation has been postponed when the examination revealed a single definite tumor in one breast in a woman at the cancer age, and I have given my reason which justified delay.

(*a-e*) Single indefinite tumor in one breast; no operation; twenty-one cases. Here operation was postponed, because the first and subsequent examinations failed to reveal on palpation a local area sufficiently definite to justify exploration. In six of these cases there was the history of a trauma; two were associated with lactation; one with an old mastitis. In seven cases, pain brought the patient for examination; in five, the patient had felt a tumor. All of these patients have been followed, and the indefinite lesion has disappeared.

(*b*) A single definite tumor in each breast; no cases; all have been subjected to operation.

(*b-e*) A single indefinite tumor in each breast; no observations.

(*c*) Multiple definite tumors in one breast; no observations; all subjected to operation.

(*c-e*) Multiple indefinite tumors in one breast; no operation; one case. In this instance the palpable indefinite area followed contusion, disappeared under observation in a few months, and there has been no recurrence after three and one-half years.

(*d*) Multiple definite tumors in both breasts; no operation; seven cases. Operation was postponed in these cases, because in three the multiple definite tumors in both breasts were associated with lactation and were looked on as benign galactoceles; in two cases because, on palpation, one could feel wormlike tumors beneath both nipples, and the condition was diagnosed dilatation of the ducts, which is not a precancerous lesion.[1]

In two cases the palpable bilateral lesion was a diffuse chronic cystic mastitis of the BB-13-8 type.[1]

In all of these seven cases, either palpable lesions have disappeared, or the patients are still recent and under observation.

(*d-e*) Multiple indefinite tumors in both breasts; no operation; fifty cases. Operation was postponed in this group because, on careful and repeated palpation, no area of sufficiently definite area could be made out to justify exploration.

Among these fifty cases of multiple indefinite tumors in both breasts, in seven there was a history of the removal, some time previously, of a benign tumor. In six, this tumor was a blue-domed cyst; in one case, an encapsulated adenoma.

The age of these patients has varied from 24 to 54 years. It is becoming a very common condition. In the first decade up to 1900 I have a record of three cases; in the third decade from 1910 to 1919, twenty-one cases. If the present rate keeps up in the fourth decade, since 1920, there will be sixty cases.

In a previous paper[2] I have discussed the palpation of single and multiple, definite and indefinite tumors in one or both breasts, associated with chronic cystic mastitis.

When we go over the histories of benign and malignant tumors and study closely the clinical records, we find that in malignant tumors there is recorded a single definite tumor in one breast; rarely is there a record of multiple tumors, either definite or indefinite, while the opposite is true in benign tumors, especially in chronic cystic mastitis. Multiplicity, therefore, of multiple tumors is suggestive of benignity.

Therefore, there should always be a careful examination of both breasts.

The differential diagnosis of breast lesions depends more on palpation than on any other factor in the history and examination.

To distinguish between a single or multiple indefinite tumor and a single or multiple definite tumor requires an acute sense of touch. The palpating fingers of the examiner should be so trained that they become instruments of precision.

Publicity has brought women who think they have lumps in the breasts so frequently for examination that never before has the medical profession been called on so often to make a differential diagnosis between a lump of the breast which should be explored and one that is part of a lumpy breast in which operation is not indicated.

Older methods of examination were inadequate. In the first ten years of my experience to 1900, when a woman came to the clinic because she had felt a lump in her breast, with hardly an exception the lump was distinct on palpation, often visible, and in almost 90 per cent. of the cases distinctly malignant. In the next ten years a few patients came under observation in whom the diagnosis was really difficult. The number of such cases has been rapidly increasing. Today, in more than 50 per cent. of my patients the diagnosis rests on palpation, and the first question to be settled is, Does the breast contain a distinct lump, or is the lump an indefinite one, and one of many?

It should be the invariable rule for the examiner to know nothing about the history of the patient. The history can be taken by somebody else and typewritten The patient must be told not to say anything to the examiner of what she is complaining, or what she or any one else may have felt.

The patient should be stripped to the waist and recline on a couch in the office, or on a bed in the hospital, with the head in a comfortable position on a pillow and the arms raised above the head. Before this method was introduced, we frequently examined the patient sitting on a chair with arms at the sides.

In this reclining position with arms elevated, one can inspect better the axillary portion of the breast and frequently see tumors in the axilla (Group 9). Also, in this position one can note at once whether

1. Bloodgood, J. C.: The Pathology of Chronic Cystic Mastitis of the Female Breast, with Special Consideration of the Blue-Domed Cyst, Arch. Surg. 3: 560 (Nov.) 1921.

2. Bloodgood, J. C.: The Pathology of Chronic Cystic Mastitis of the Female Breast, with Special Consideration of the Blue-Domed Cyst, Arch. Surg. 3: 445-542 (Nov.) 1921.

there is any bulging due to a tumor in either breast. I have never observed a small benign tumor to bulge, and up to the present time all such tumors visible on inspection have been malignant, and this bulging has been the only sign differentiating them from the benign.

One should carefully inspect the nipple, looking for warty growths, scaly areas, weeping or any of the signs of early Paget's disease (Group 5). Changes in the areola, its size or pigmentation have no important significance, except in pregnancy. That one breast is larger than the other and yet retains its symmetry is a common occurrence and of no importance. One breast may be so much larger than the other that it may be called unilateral hypertrophy (Group 10). If not due to this, it is the seat of a large tumor. It is important to note that discharge from the nipple may produce an irritation and be confused with early Paget's disease. The secretion irritates the epidermis and gives rise to scaling and scabbing.

For many years we have made comparative measurements of the radii of the breast and of points between the top of the sternum and clavicle to the nipple, but I have not a record of a single case in which such measurements could be depended on alone for diagnosis, nor have I found them particularly helpful. Inspection, of course, must look for congenital retraction of both nipples, retraction of the nipple, dimpling of the skin, and any changes in color of the skin over both breasts.

It is important to repeat here that it is essential that the examiner receive no suggestion as to which breast the patient thinks is giving trouble, or as to what has been felt by the patient or any other previous examiner.

If the examiner feels a possible lump in the left breast and the previous examiner has felt it in the right breast, this indicates that neither lump is a real tumor and that it is only part of a lumpy breast. It is also important to remember that the first palpation is very likely to increase the consistency of the breast tissue due to congestion. This congestion remains only a few minutes, so that when one feels an indefinite lump in the outer and upper quadrant and then later feels nothing, the correct conclusion is not difficult. These lumps due to congestion are more likely to occur if the examination is made during or just before the menstrual period, and especially in younger and unmarried women.

My method is to palpate the two breasts at the same time, the right breast with the left hand, the left with the right hand, palpating corresponding areas, never touching the nipple until palpation is completed. This allows one to get at the relative consistency of the same areas in different breasts. Then one should palpate each breast with both hands feeling especially for the edge of the breast. Then one should place one hand on the different parts of the breast and move the fingers as when playing the piano, palpating the breast between the fingers and the chest wall. This is the most important procedure and should come last, because by this time areas of congestion will have disappeared. Having found a distinct tumor, one should ask the patient where she has felt the tumor. In all of my observations in which there is a distinct tumor, the patient as well as all previous examiners have also felt the tumor in the same area. When there is no distinct tumor, either the patient has sought advice for pain only, or for discharge from the nipple, or the area which the patient and previous examiners have felt as a tumor is one that you have not picked out, or is a different portion of the same, or in the other breast.

In a few instances I have been unable to feel any tumor, even an indefinite one, but the patient has pointed out to me the area in which she has felt the tumor, when to my surprise I also felt it distinctly. Such tumors have always been smaller than a 10-cent piece, freely movable, and, when removed, have always proved to be benign.

When no distinct tumor can be felt, or when there is one indefinite tumor or more than one in one or both breasts, a second careful examination should be insisted on a few days or a week later, and in some cases repeated examinations. But up to the present in only one instance in which the first examination was negative for a definite tumor have I at the subsequent examination made out a definite tumor. In this case the interval was three weeks, the tumor the size of a 10-cent piece, buried in fat in a large breast; and, when explored, it prove to be malignant. In this case the glands were not involved, and the patient is well more than five years later.

When the breasts are large and the subcutaneous fat thick, palpation is much more difficult.

The responsibility for this careful examination by inspection and palpation is by no means a small one. For this reason it should never be superficial, and should be repeated as often as is necessary. On the one hand, one does not wish to make the mistake of overlooking a definite tumor of the breast, or, on the other hand, that of performing an unnecessary operation.

9. *Tumors in the Axilla; Aberrant Breast Tissue; Lipoma; Lymph Glands; Tumors of Sebaceous and Sweat Glands.*—I have notes on seventeen cases. Fourteen were unilateral, three bilateral; three were associated with lactation, and one with pregnancy. It has been observed from puberty until after menopause. Sometimes the patients had pain which called their attention to the swelling, but more often they simply observed a fulness in the axilla. On inspection, with the arms elevated, one sees a bulging at the periphery of the upper and outer quadrant of the breast in the case of the axilla below the muscle. On palpation, it feels like breast tissue. In these seventeen cases nothing was done, and no lesion has developed.

In one instance, in a girl after puberty, the mass was large enough to justify its removal. The microscopic section showed normal breast. In a few instances we have observed both carcinoma and benign tumors in this axillary portion of the breast, but in not a single instance was there a record of a previous swelling suggesting hypertrophy of this breast.

The other lesions of the axilla are not of sufficient number or importance to justify a discussion here.

10. *Unilateral Hypertrophy at Puberty.*—I have previously discussed this.[3] At that time (1917) I had observed six cases. This lesion is not necessarily pathologic. Before, during or shortly after the first menstrual period, one breast becomes larger than the other. If palpation reveals no tumor, operation is not indicated. In time the other breast begins to develop, and symmetry is reestablished.

3. Bloodgood, J. C.: Lesions of the Female Breast, Section 23, Vol. I, p. 559, in Binney: Treatise on Regional Surgery, Philadelphia, P. Blakiston's Son & Co., 1917.

11. *Diffuse Virginal Hypertrophy.*—This was previously discussed.[2] Since then I have observed three additional cases, which, however, have not reached the size justifying operation. In thirty years' experience I have seen cancer once in which the patient had diffuse virginal hypertrophy, and in another instance there was an encapsulated fibro-adenoma. The clinical picture is distinct, its etiology is unknown, and we do not know of any method of treatment which will prevent its occurrence or check its growth.

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THE FUNCTION OF THE COLOSTRUM *

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Recent studies on the chemistry of milk proteins and on their behavior in immunologic reactions [1] have incidentally brought into the foreground certain hitherto insufficiently appreciated facts concerning the colostrum, which seem to have much practical significance. The production by the mammary glands for a few hours after parturition of a secretion, colostrum, which is quite different in composition from the true milk that is thereafter their chief secretion, seems to be a universal occurrence in all mammals, and hence cannot well be a fortuitous circumstance without significance; and yet the textbooks on obstetrics and pediatrics do not indicate that any considerable importance is generally attributed to this secretion.

Analysis of bovine colostrum by Crowther and Raistrick [2] disclosed that the colostrum from early milkings contains on an average as much as four times more protein than the milk of the same cow, this increase being due to the presence of a great quantity of globulin, added to about the usual quantity of milk albumin and casein. Within forty-eight hours after lactation, the globulin content falls to about one-tenth the quantity that was present in the first colostrum. These authors found that from the chemical standpoint casein, lactoglobulin and lactalbumin are sharply differentiated and distinct proteins, and that they have the same composition whether prepared from colostrum or from milk. The lactoglobulin resembles in chemical composition the globulin of ox blood serum, but lactalbumin is quite distinct chemically from serum albumin, and casein is entirely different from any known blood protein. Applying the racemization method of Dakin to the study of the character of milk proteins, Woodman [3] found that even in the fine details of structure of protein molecules which this method brings out, the identity of the globulins from cow's milk, colostrum and serum was demonstrated; also that the albumin of colostrum and milk are the same, but distinctly different from the serum albumin.

The immunologic studies of Wells and Osborne, corroborating and extending the results of earlier workers in this field, established that the globulin of milk behaves in its biologic reactions exactly the same as serum globulin, but that the other three known proteins of milk (casein, lactalbumin and alcohol-soluble protein) have no biologic counterparts in the serum.

These mutually confirmatory observations, together with many similar ones made previously, all establish that colostrum is a fluid that is characterized by consisting of an extremely rich solution of globulin (about 8 per cent.) added to the usual proportions of casein and albumin of milk, and that this globulin is identical with serum globulin, being the only protein of milk that is identical with any of the blood proteins. What is the purpose of this great secretion of globulin into the milk for a few hours after the young are born? It evidently is a true secretion, and not any mere leakage of proteins from the vessels, since the serum albumin and fibrinogen do not appear in the colostrum, and the globulin content of colostrum may be much higher than that of the blood. Undoubtedly it is related to the fact that the serum globulin fraction contains or carries the antibodies of the blood,[4] and that numerous investigations on the defensive mechanism of new-born animals have shown that the suckling animal secures important accessions to its antibody defense during the first days of life. It is generally recognized that young infants possess a greater or less degree of immunity to various infections. Often this early immunity is but transitory, which indicates that it is a passive immunity, and therefore to be attributed to antibodies obtained from the mother, whether through the placenta or through the colostrum.

The literature on this subject to 1912 has been carefully reviewed by Famulener,[5] who found it to show that when the mother exhibits a high degree of immunity at the time of birth of young there is some passive transfer of immunity, either through the placenta before birth or by means of the milk immediately after birth. Famulener immunized goats to sheep erythrocytes during gestation, and found that the blood of the newly born kids taken before they had suckled showed no appreciable amount of hemolysin, so that evidently little placental transfer of this antibody had taken place. The colostrum of the immunized mothers was found rich in hemolysins, often much richer than the serum of the same animal, and kids getting the colostrum quickly acquired a high antibody content in the blood. The milk soon lost its hemolysin content after the colostrum stage, and lactating goats immunized after gestation did not secrete antibodies in their milk in quantities comparable to that found in the colostrum, and often the milk contained no demonstrable antibodies. Older sucklings did not absorb antibodies from the milk to such an extent that they could be demonstrated in the blood. It is to be recalled that early investigators found that the newly born mammal is able to absorb proteins from the alimentary canal in an unchanged condition to a much greater extent than later, when the digestive processes have become more developed.

If one compares the curve of antibody titer in the colostrum and milk observed by Famulener, it will be seen to correspond perfectly with the curve for globulin content established for colostrum and milk by Crowther and Raistrick; that is, the early colostrum may contain much more antibody and globulin than the mother's serum, and both fall in from twenty-four to forty-

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1. These are fully reviewed by Wells, H. G., and Osborne, T. B.: Anaphylaxis Reactions with Proteins from Milk, J. Infect. Dis. **29**: 200 (Aug.) 1921.

2. Crowther, Charles, and Raistrick, Harold: A Comparative Study of the Proteins of the Colostrum and Milk of the Cow and Their Relations to Serum Proteins, Biochem. J. **10**: 438, 1916.

3. Woodman, H. E.: A Comparative Investigation of the Corresponding Proteins of Cow and Ox Serum, Cow's Colostrum and Cow's Milk by the Method of Protein Racemization, Biochem. J. **15**: 187, 1921.

4. It has not yet been determined whether the antibodies actually are globulins or not.

5. Famulener, L. W.: The Transmission of Immunity from Mother to Offspring, J. Infect. Dis. **10**: 332, 1912.

eight hours to a very low figure, to continue at a low, often negligible level in the milk thereafter. Famulener expressed clearly the idea that the colostrum is characterized by containing large amounts of antibodies, probably associated with its high globulin content, and that these are absorbed unchanged from the alimentary canal into the blood of the new-born suckling animal, but the practical importance of his contention seems to have been generally overlooked. More recent developments in our knowledge of the chemistry of colostrum have served to support the correctness of his deductions, and such experimental work as has been done on the immunology of the new-born has corroborated his experimental results. Thus, Reymann [6] found that, at least in the case of agglutinins in goats, the young were usually born without agglutinin but acquired a considerable amount during the first days of life from the mother's milk. He found also that the colostrum is especially rich in these immune bodies, commonly being richer in agglutinins than even the serum of the same animal, just as the colostrum may be richer in globulin than the blood of the same animal. The same thing seems to be true of antibodies other than agglutinins. The amount of antibodies in the milk falls rapidly during the first two or three days of lactation, and usually the later milk does not contain quantities large enough to be demonstrated; in other words, the antibody content of the lacteal fluid parallels the globulin content. Also, Howell and Eby [7] found that the antibodies of the mother's blood diminish after parturition, presumably because they are being poured out into the colostrum.

Little and Orcutt [8] found that when the blood of cows contains specific agglutinins for *B. abortus*, through natural infection, these agglutinins are also present in the colostrum, and often the concentration is higher in the colostrum (three of four cases), but the blood of the calves when born contains no agglutinins; only after the calves have suckled the colostrum does their blood contain the agglutinins, and then the titer may rise to a higher level than that of the mother's blood. When the colostrum was withheld and milk of a low or negative agglutinin titer substituted, agglutinins failed to appear or to accumulate in the blood of the calf. Agglutinins begin to appear about an hour after the calf has ingested colostrum, and may reach a maximum within five hours after feeding. This work is of particular significance since it deals with immune bodies the results of natural infection, and, with the previously quoted work, seems to establish definitely that such passive immunity as very young animals exhibit does not come ordinarily, if at all, by transfer through the placenta, but by alimentary absorption from the colostrum.

The various facts cited above all lead to the conclusion reached by Famulener on the basis of a study of the attainment of the immune bodies by the new-born mammal, and also later by Wells and Osborne from a consideration of the chemistry of the milk proteins, that the formation of colostrum is for the purpose of presenting to the new-born mammal a concentrated solution of serum globulin which carries antibodies from the maternal blood, during the brief time that these protective proteins can be absorbed unaltered from the alimentary canal in an active condition.

An important chemical contribution to this subject, which harmonizes perfectly with the foregoing hypothesis, has been made by Howe,[9] who found that the blood of a new-born calf does not contain euglobulin, this being the globulin fraction of serum with which the antibodies are found associated. If the calf suckles a cow secreting colostrum, the blood serum soon contains relatively large amounts of euglobulin; but if the calf suckles a cow that has been lactating for some time, and yielding milk which is known to contain very little globulin, the quantity of euglobulin in the calf's blood remains negligible for several hours, and it increases much more slowly than in a calf that has received colostrum from the beginning.

The practical importance of the foregoing observations on the lower mammals has led us to make observations on the human subject, and we have repeated Howe's investigations on the blood of adult persons and on young infants, using the method which he devised for the quantitative estimation of the protein fractions in small quantities of blood. The results are given in the accompanying table, the figures being grams of nitrogen per hundred cubic centimeters of serum.[10]

PROTEIN CONTENT OF HUMAN BLOOD

Adult	Total Nitrogen	Euglobulin Nitrogen	Pseudoglobulin I Nitrogen	Pseudoglobulin II Nitrogen	Total Globulin	Albumin Globulin
1.	1.379	0.254	0.365	0.070	0.687	0.540
2.	1.332	0.225	0.232	0.191	0.648	0.492
3.	1.340	0.236	0.190	0.122	0.551	0.527
4.	1.167	0.247	0.102	0.100	0.449	0.471
5.	1.423	0.280	0.158	0.109	0.547	0.408
New-born infant, umbilical cord blood						
1.	0.689	0.006	0.122	0.079	0.207	0.445
2.	0.972	0.000	0.240	0.015	0.403	0.528
3.	0.788	0.009	0.170	0.060	0.269	0.443
4.	1.060	0.000	0.224	0.105	0.479	0.567
5.	0.854	0.000	—	—	0.382	—
6.	1.004	0.005	—	—	0.405	—
Infants, with colostrum						
3 weeks	0.983	0.306	0.222	0.087	0.515	
12 days	0.887	0.000	—	—	0.1467	
11 days	0.887	0.089	—	—	—	
Infant, no colostrum						
3 weeks	0.885	0.082	0.306	0.008	0.386	

Examination of this table discloses that the new-born human infant is virtually devoid of euglobulin in its blood serum, although it has quite as much serum albumin and about the same quantity of pseudoglobulin as the adult. This is in striking contrast with the practically constant presence of about 0.225 to 0.250 gm. of euglobulin nitrogen per hundred cubic centimeters in the blood serum of adults. Furthermore, we see in the serum of young infants a gradual rise in the euglobulin content, more rapid in infants receiving colostrum as far as can be ascertained from the few figures available, the number being limited by the difficulty of securing suitable material. Therefore, we have found in human infants exactly what Howe found in calves, namely, that they are born with no euglobulin in their blood, and that they acquire it, at least in large part, from the colostrum.

6. Reymann, G. C.: On the Transfer of the So-Called Normal Antibodies from Mother to Offspring, J. Immunol. **8**: 227, 1920.

7. Howell, Katherine M., and Eby, Harriet: The Transmission of Specific Immune Bodies from the Mother to the Young, J. Infect. Dis. **27**: 550 (Dec.) 1920.

8. Little, R. B., and Orcutt, Marion L.: The Transmission of Agglutinins of B. Abortus from Cow to Calf in the Colostrum, J. Exper. Med. **35**: 161, 1922.

9. Howe, P. E.: An Effect of the Ingestion of Colostrum upon the Composition of the Blood of New-Born Calves, J. Biol. Chem. **49**: 115 (Nov.) 1921.

10. The blood of the new-born infant was obtained from the umbilical vein. When free hemoglobin was present in the serum it was found that the results for euglobulin were too high, and such specimens were discarded. The blood of the infants was obtained from the superior longitudinal sinus. We are indebted to Dr. E. L. Cornell of the Chicago Lying-in Hospital, and Dr. W. B. Moody of the Cook County Hospital for our material.

Why the other blood proteins are present in the serum of the new-born animal in about the same proportions as in the adult, while the euglobulin alone has to be obtained after birth, we cannot explain. The fact indicates at least that the euglobulin is in some way essentially different from the other blood proteins. Another respect in which euglobulin is unique is its association with the immune bodies of the blood. These two peculiarities, added to the fact that euglobulin is the predominant protein of colostrum, being the only blood protein secreted by the mammary gland into the milk, seem to establish a new significance to this protein, or this fraction of the serum proteins.

These findings all add force to the conclusions expressed by Famulener in these words:

> All observers are agreed in the conclusion that the newly born animal (or infant) absorbs from the digestive tract unaltered antibodies most readily when given immediately after birth. The most effective means of supplying the antibodies to the young is through the mother's colostrum-milk (homologous); probably next in importance is the homologous serum, and finally the antibody milk or serum from some other species. It follows from our observations that of all factors the colostrum plays the most important rôle in transmitting antibodies from the actively immunized mother to the young. Even under normal conditions, it is reasonable to suppose that protective substances are concentrated in the colostrum from the mother's body fluids and may be in part absorbed by the infant after the first feedings. Consequently *it seems of highest importance that the newly born child should, during the first days of life, receive the colostrum-milk* [italics ours] unless it is contraindicated for some special reason. Perhaps the natural resistance which many infants show against many infectious diseases may be partially explained on the basis that the child is passively immunized by antisubstances excreted through the immune mother's colostrum and milk, which are absorbed by nurslings during the early days of life. Such a view gains strength from the observations of Moro, who found that the blood serum from breast-fed infants showed greater bactericidal and hemolytic powers than that from infants who were artificially fed upon cow's milk.

The possibility of adding to the immune-body supply of the new-born infant by feeding serum or globulin concentrates rich in useful antibodies, or colostrum from cows or goats, suggests itself, and is now the subject of our investigation. Even if this is possible it is very probable that it is not desirable, since, if the globulin which bears the immune antibodies is absorbed by the infant, there will presumably also be a sensitization to these foreign proteins which would certainly not be desirable, especially since any immunity thus acquired would be passive and therefore transient, while the sensitization would be active and permanent. The experiments of Wells[11] have shown that young animals, even after the first days of life, may be made hypersensitive to proteins given in their food, so that they give anaphylactic reactions when these proteins are injected into them. The temporary increase of passive immunity against infections to which the infant might never be exposed would probably not be worth the price of a possible horse asthma or food asthma, or a hypersensitivity to serum needed later for therapeutic purposes.

SUMMARY

The blood of new-born infants, and probably of all other mammals, contains little or none of the serum protein or protein fraction known as the euglobulin. This seems to be supplied chiefly by the colostrum, which differs from milk in containing a large amount of this protein secreted directly from the blood. The euglobulin is the only blood protein that appears in the colostrum, and it is the only protein fraction in which the new-born infants' blood is deficient. Evidently the colostrum is formed to provide the fetus with a supply of euglobulin for its blood, during the short period immediately after birth when proteins may be best absorbed without disintegration by digestive proteolysis. The importance of this lies in the fact that the protective antibodies of the blood are found associated with the euglobulin fraction, and that the quantity of protective antibodies found in the colostrum, the milk and the infants' blood varies directly with the euglobulin content of these fluids. Evidently the colostrum furnishes to the new-born mammal protective antibodies, which probably add much to its capacity to resist infection in early life. If the infant does not receive colostrum it acquires euglobulin in its blood much more slowly, and presumably is in corresponding degree less resistant to infection. It is not probable that there is any equivalent substitute for human colostrum for new-born infants. The findings of numerous recent workers reviewed in this article add force to the statements made by Famulener, ten years ago, that it is most highly desirable that every new-born infant should receive its full ration of human colostrum.

11. Wells, H. G.: Studies on the Chemistry of Anaphylaxis, III, Experiment with Isolated Proteins, Especially Those of the Hen's Egg, J. Infect. Dis. 9:147, 1911.

CEREBRAL EMBOLISM FOLLOWING THE ARREST OF AURICULAR FIBRILLATION BY QUINIDIN*

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The abolition of auricular fibrillation by quinidin is one of the most remarkable phenomena of clinical pharmacology. The drug is already widely used, and it is desirable that the occurrence of alarming symptoms or undesirable accidents following its administration should be recorded promptly.

REPORT OF CASE

History.—G. H., an American lumberjack, aged 64, admitted to the medical service of the University Hospital, Jan. 13, 1922, complained of breathlessness, cough, pain in the right inguinal region, and deafness. He had had an occasional sore throat, and diphtheria during childhood and, at the age of 9, scarlet fever followed by otitis and permanent deafness. He had had "quinsy" almost every winter for the last thirty years. He had used alcoholic beverages in excess and had smoked about half a package of tobacco a day for many years. He denied having had venereal disease. Sixteen years before admittance he was confined to bed for nine months; the legs and the body were swollen; the former were painful, tender and hot. He had little if any fever. After this illness, which gradually "wore off," he felt quite well except that his legs swelled if he remained on his feet for any great length of time, and his face sometimes appeared "puffy." He had been troubled by breathlessness and palpitation for at least ten years, and thought that his heart beat had been irregular throughout this period. During the last two years these symptoms had been worse, and he had also noted dizziness, a chronic cough, and on a few occasions dysuria. There had been occasional nocturia. He continued to work until February, 1921, when an inguinal hernia developed. This was

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operated on four months before he was admitted, but the operation was unsuccessful. Since that time his condition had been worse and he had been unable to work, partly because of his large painful hernia and partly because of increasing shortness of breath.

Examination.—The skin showed senile changes; it was pigmented, inelastic and wrinkled. The pupils reacted to light normally, and there was no gross disturbance of vision. Hearing was almost entirely lost in the left ear, and was greatly diminished in the right, so that a watch could not be heard beyond 5 cm. (2 inches). There was slight enlargement of the left lobe of the thyroid, and there were a few palpable cervical glands.

The apex beat was in the fifth intercostal space, 12 cm. (4¾ inches) to the left of the median line. The rhythm was absolutely irregular; the apex rate was 96, the pulse rate 82. The heart sounds were not abnormal except that the aortic second sound was loud and ringing. There were no murmurs. The lungs were emphysematous; moist râles were heard over the lower back on both sides. The radial, brachial and temporal arteries were tortuous and sclerotic. There was slight tenderness in the right upper quadrant of the abdomen; the liver could not be felt.

There was a large right inguinal hernia. The knee jerks were prompt and equal. There was no edema of the ankles.

The urine and blood showed nothing abnormal. The Wassermann reaction was negative. The blood pressure was normal.

An orthodiagraphic examination, January 17, disclosed great cardiac enlargement and arteriosclerosis of the aorta.

Course in Hospital.—A diagnosis of cardiosclerosis with auricular fibrillation and heart failure was made. The patient was given two preliminary doses of quinidin sulphate, 3 grains (0.2 gm.) each, which produced no unusual symptoms. On the following day (January 21) he received three doses of 6 grains (0.4 gm.) each at four hour intervals. Aside from a conspicuous increase in heart rate, no special effects were noted. After a fourth dose of the drug on the following morning, it was found that his pulse had become regular. About eight hours later he complained of sudden numbness of the left side of the body and left extremities, and of being unable to see well objects to the left of him. Examination revealed weakness of the left arm, diminished knee jerk on the left, and left homonymous hemianopsia. He was seen by Dr. C. D. Camp, who made a diagnosis of "extrapyramidal hemiplegia due to a lesion in the neighborhood of the right optic thalamus." Up to March 1 the auricular fibrillation had not returned. The neurologic signs were still present but less conspicuous. There can be little doubt that they were the result of cerebral embolism.

UNDESIRABLE SYMPTOMS FOLLOWING ADMINISTRATION OF QUINIDIN

A few words may be said about the undesirable symptoms following the administration of quinidin that have been reported in the literature. They fall into four groups:

1. *Increased Cardiac Failure.*—In a number of instances[1] the administration of quinidin has apparently led to an increase in the grade of cardiac failure. This has led various authors to advise against its use when a high grade of cardiac failure is present; in such cases a course of digitalis is usually given first. This effect is probably due to the great increase in heart rate which quinidin often produces in cases of auricular fibrillation, either through its effect on the auricular mechanism or by paralyzing the vagi.[2] It has also been held that it depresses the contractility of the heart; but, according to Cohn and Levy,[3] doses comparable to those used clinically do not have this effect in dogs. By proper care in selecting cases, this unfavorable action may probably be avoided.

2. *Attacks of Apparent Respiratory Paralysis.*—Frey[4] has reported two cases in which the administration of ordinary therapeutic doses of the drug was followed by attacks of great weakness with temporary cessation of respiration accompanied by disappearance of the pulse; the patients were revived by artificial respiration and stimulants. He observed a third case which was similar except that the pulse was not affected. The patient was unconscious for one and one-half hours, and had periods of apnea lasting thirty-five seconds. Following the advice of Frey, it is now customary to test each patient for special susceptibility to the drug by giving small preliminary doses; whether this will enable us to avoid accidents of the type in question is still uncertain. One of Haass' patients (quoted by Hewlett and Sweeney[1]), who had taken 45 grains (2.9 gm.) of quinidin in all, suddenly became pulseless and cyanotic; after the attack the rhythm was found to be regular. This attack appears to have had a different origin from those described by Frey; it suggests the Stokes-Adams attacks of heart block, and was possibly due to the failure of the sinus node or other nodal tissue to take up its function promptly after cessation of the fibrillation.

3. *Embolism.*—The tendency of embolism to occur following the cessation of auricular fibrillation was noted before quinidin was used. It has been attributed to the dislodgment of thrombi, formed in the dilated fibrillating auricles, on resumption of normal auricular activity. It was to be anticipated, therefore, that the arrest of fibrillation of the auricles by quinidin would sometimes be followed by embolism. Frey[4] and Benjamin and von Kapff[5] have each reported cases in which pulmonary embolism occurred a few hours after normal rhythm was established. Ellis and Clarke-Kennedy[6] have reported two cases of probable embolism following quinidin. In the third case of their series there was sudden pain and tenderness under the left costal margin; a splenic embolus was suspected. In the first case a sudden pain in the left loin was followed by hematuria, and, on examination, the left kidney was felt to be large and tender. In this case a second embolus lodged in the popliteal artery after the fibrillation had returned. At present there does not seem to be any way of avoiding this type of accident. It should be noted that spontaneous embolism is not uncommon in chronic heart disease, particularly mitral stenosis.

4. *Sudden Death.*—A case of sudden death following quinidin was reported by Benjamin and Kapff. The preliminary doses of the drug indicated that the patient was unusually susceptible. Treatment was therefore begun with doses of 0.2 gm. (3 grains). After two doses the pulse became regular. Three quarters of an hour after the third dose the heart beat suddenly ceased without premonitory symptoms. The respiratory movements continued for a brief period. Two other cases of sudden death were mentioned by Hewlett and Sweeney, and we have heard of others that have not yet been recorded. The cause of sudden death after quinidin is unknown. Embolism, failure of the sinus node promptly to begin the elaboration of

1. Eyster, J. A. E., and Fahr, G. E.: Observations on the Use of Quinidin in Auricular Fibrillation, Arch. Int. Med. **29**: 59 (Jan.) 1922. Hewlett, A. W., and Sweeney, J. P.: The Quinidin Treatment of Auricular Fibrillation, J. A. M. A. **77**: 1793 (Dec. 3) 1921.
2. Lewis, T.; Drury, A. N.; Iliescu, C. C., and Wedd, A. M.: Brit. M. J. **2**: 514 (Oct. 1) 1921.
3. Cohn and Levy: Personal communication to the authors.
4. Frey: Ztschr. f. d. ges. exper. Med. **25**: 290, 1921.
5. Benjamin and von Kapff: Deutsch. med. Wchnschr. **47**: 10 (Jan. 6) 1921.
6. Ellis, A. W. M., and Clarke-Kennedy, A. E.: Lancet **2**: 804 (Oct. 29) 1921.

impulses, the known depressant effect of the drug on intraventricular conductivity, and its tendency greatly to enhance the ventricular rate, and respiratory paralysis must be considered. In view of the effect of the drug on auricular fibrillation, ventricular fibrillation seems an unlikely cause of death.

Although the accidents following the use of quinidin have not so far been sufficiently numerous to contraindicate its use, the possibility of their occurrence must be borne in mind. It would perhaps be best to withhold the drug in cases in which considerable improvement is not to be expected from its use. By the careful selection of cases it is probable that their frequency may be reduced, but it is not likely that they can, for the present, be avoided entirely.

THE TREATMENT OF MULTIPLE SCLEROSIS *

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With the etiology and pathology of multiple sclerosis still subjects of controversy, and spontaneous remissions or intermissions as characteristic features of the disease, the beneficial results claimed for any form of therapy are likely to be regarded with a degree of skepticism. If, however, conditions necessary for the institution of rational therapy are obscure, the choice of empiric measures is not altogether a matter of chance; and in this instance it rests on the recognition of clinical features similar to those of a better known disorder in which the therapeutic regimen is directed on a more nearly rational basis.

That there is a striking analogy in the symptomatology and pathology of insular sclerosis and certain types of cerebrospinal syphilis is generally admitted; and yet, medical opinion is quite unwilling to entertain an idea that syphilis may be an etiologic factor in disseminated sclerosis.

Until very recently, the belief has been general that multiple sclerosis is an uncommon disease. Spiller,[1] in 1903, stated that it "seems to be a rare disease in America, and scarcely any cases with necropsy are to be found in the literature of this country." It was his opinion, nevertheless, that probably many cases are overlooked; and four years later, he and Camp [2] apparently found the disorder more general and closely related to certain types of disseminated syphilis, but cautioned the reader that no possible causal relationship between the two diseases was discussed, and stated that "there seems at present a danger that much will be called multiple sclerosis that in reality is some other disease."

Heedful attention to this warning is especially desirable in the differentiation of multiple syphilitic lesions; and the records of the neurologic dispensary for the last decade indicate that multiple sclerosis is either a very common affection or that it is not being distinguished from its clinical image. Often a patient supposed to be suffering from multiple sclerosis exhibited symptoms known to occur in cerebrospinal syphilis, and occasionally a positive Wassermann report necessitated a revision of the diagnosis. The Wassermann test is not, however, uniformly positive in clinical syphilis, so that failure to secure laboratory confirmation of syphilis in all of the cases is no proof that syphilis may not be an etiologic factor in this strikingly analogous affection.

It seemed reasonable to assume, therefore, that the "other disease" referred to by Spiller might be a type of syphilis, clinically similar to multiple sclerosis, in which a negative Wassermann test is of questionable diagnostic importance; and that antisyphilitic treatment might be a useful form of therapy in these equivocal cases of multiple sclerosis.

Opportunities to test the soundness of this belief have, however, been greatly restricted, and recognition of this imperfection has deterred me from earlier publication; but the concluding paragraph of a later article by Spiller [3] makes me feel that a record of the results which have thus far been obtained may not be entirely unwarranted. "It seems probable," Spiller states, "that syphilis has some influence over multiple sclerosis. The typical lesions probably are not syphilitic in character, but the syphilis may be an *agent provocateur*. It would be well to treat early cases of multiple sclerosis as probably syphilitic—the therapeutic test is well worthy of trial."

The records of the following cases, in which the therapeutic results were observed through a number of years, contain only the essential features. Inquiries which failed to establish the presence of the usual predisposing factors, and examinations which revealed normal conditions are, as a rule, not recorded.

REPORT OF CASES

CASE 1.—*History.*—E. S. C., a man, aged 38, married, referred by Dr. Peregrine Worth of Hagerstown, Md., Oct. 4, 1913, complained of difficulty in using the left leg. The family history was unimportant. With the exception of the usual diseases of childhood, he enjoyed excellent health until 1907 when, at the age of 32, a venereal sore developed. Both local and general treatment was administered, and there were no secondary manifestations. After several months he was discharged as "cured," and remained well until the onset of the present illness. His wife was living and well, and had had no miscarriages.

Present Illness.—Two years before I saw him, walking became difficult because of stiffness of the left leg and occasional stubbing of the toes of the left foot. At first, these symptoms occurred only occasionally, but grew progressively worse, and several months later the right leg and foot were similarly affected. To this motor disability were added, during the second year of his illness, diminution of sexual power and defective sphincter control. There had been brief intervals of marked remissions, but within the last six months all symptoms had been more persistent and of greater intensity. General nervousness had become a prominent feature.

Examination.—The pupils were equal and regular, and reacted normally. The fundi, visual acuity, and ocular movements showed no impairment. The tongue was tremulous and the speech hesitating. Both upper extremities showed a definite tremor which was intensified on voluntary movement. The deep reflexes of the arms were about equally exaggerated.

Resistance to passive movements was distinctly increased in both legs, but to a greater degree on the left side. The gait was spastic, and the toes of the left foot were stubbed or dragged along the floor. There was no atrophy, ataxia, or objective sensory disorder. All tendon reflexes of the lower extremities were hyperactive. Bilateral ankle clonus, and bilateral dorsal flexion of the great toe were elicited. Neither abdominal reflex was obtained.

* Read in abstract before the Philadelphia Neurological Society, Nov. 25, 1921, and the Baltimore City Medical Society, Dec. 16, 1921.

1. Spiller, W. G.: A Report of Two Cases of Multiple Sclerosis, with Necropsy, Am. J. M. Sc. **125**: 61, 1903.

2. Spiller, W. G., and Camp, C. D.: The Clinical Resemblance of Cerebrospinal Syphilis to Disseminated Sclerosis, Am. J. M. Sc. **133**: 884 (June) 1907.

3. Spiller, W. G.: The Subacute Form of Multiple Sclerosis, Arch. Neurol. & Psychiat. **1**: 219 (Feb.) 1919.

Physical examination revealed no abnormality in the thorax or abdomen. The urinary analysis and blood picture were normal. The spinal fluid was clear and colorless; pressure, 70 mm.; lymphocytes, 9; globulin, ++; Wassermann reaction, 0; blood Wassermann reaction, 0.

Summary and Conclusion.—A man, with a history of syphilis, developed, four years after the infection, progressive paraplegia, speech defect, tremor, and sexual and bladder disturbances. The deep reflexes were exaggerated. Bilateral ankle clonus and bilateral positive Babinski were obtained. The abdominal reflexes were absent. These symptoms exhibited the remissions and exacerbations common to syphilis and multiple sclerosis, but there was no laboratory evidence of syphilis; and the slight abnormalities of the spinal fluid have been observed in both diseases. Thus, a clinical distinction is not readily made, but in all probability the affection is syphilitic in nature, although some clinicians may regard it as true multiple sclerosis. Because of the negative laboratory report, the adoption of intensive antisyphilitic treatment was not insisted on, and a provocative course of mercurial inunctions was ordered.

Treatment and Subsequent Course.—During eight weeks, beginning Oct. 26, 1913, fifty mercurial inunctions and one intravenous dose of arsphenamin, 0.6 gm., were administered. Two Wassermann tests of the blood were repeated with negative results. No improvement was noted in the clinical condition, and the patient was temporarily discharged with a diagnosis of multiple sclerosis and an unfavorable prognosis.

Jan. 8, 1914, a luetin test, although of undetermined value, was reported as positive, and the patient was later admitted to the Church Home and Infirmary for intensive antisyphilitic treatment. This consisted of one intravenous dose of arsphenamin, 0.6 gm., and two intradural doses of mercurialized serum containing 0.00065 and 0.00130 gm. of mercuric chlorid. Lumbar pucture revealed the spinal fluid clear, under a pressure of 180 mm.; lymphocytes, 12; globulin, ++. A Wassermann test was not made. Further treatment was, for the time being, discontinued. One month after discharge from the hospital, the patient wrote: "I seem to be getting along very nicely, I feel much better and I think I can walk very much better."

April 1, 1914, examination revealed that the gait was decidedly improved. The patient had gained 7 pounds (3.18 kg.) in weight, and the bladder was said to be under better control. The reflexes were unchanged. Following prolonged exposure to dampness two days before, the gait was said to be not so good as before exposure, but much better than it was before intradural treatment. Because of the slight recrudescence following exposure, a third intradural dose of mercurialized serum (mercuric chlorid, 0.00130 gm.) was administered, June 26. Examination at this visit disclosed a definitely improved gait and a gain in weight. The patient said he felt fine, and bladder function was improved. Tremor and speech defect were not so marked. The spinal fluid was clear; lymphocytes, 10; globulin and Wassermann tests were not made.

Nov. 12, 1914, the patient returned for reexamination and stated that "he felt fine, could walk almost normally, did not stump his toe, and the bladder trouble was greatly relieved." He had continued to gain in weight, and objectively his condition appeared to be normal. There was no tremor or speech defect. The reflexes were the same as at the first examination. Four months later, the clinical improvement persisted. The spinal fluid was clear; pressure 230 mm.; lymphocytes, 6; globulin, +; Wassermann reaction, negative. Nothing further was heard from him until April 15, 1916, a year later, when he made the favorable report: "I feel perfectly well, my walking is normal, and the bladder gives me very little trouble." Examination at this time revealed that the reflexes and pupillary reactions were the same as when treatment was begun, but the speech and gait were normal, and there was no tremor. Nine months later he wrote: "I am about the same as when you last saw me. Have been feeling fine and have very little trouble." A similar report was received, June 24, 1917, and confirmed on reexamination. Because of overwork and undue fatigue he was advised to diminish the amount of work and return for further study if no improvement was noted; but he was not heard from again until three years later.

July 12, 1920, he wrote: "Have certainly been in good health and feeling fine ever since I took last treatment" (June 26, 1914, six years previously).

Oct. 26, 1920, reexamination revealed that the gait was practically normal; there was no spasticity, tremor or speech defect. The reflexes were unchanged from the first examination. Sphincter control was said to be good. The spinal fluid was clear; pressure, 70 mm.; lymphocytes, 11; globulin, +; Wassermann reaction, 0; blood Wassermann reaction, 0. The clinical and laboratory studies did not seem to warrant further intradural treatment, and a course of intramuscular injections of mercury was ordered. A letter of July 19, 1921, stated that he slept better, had gained in weight, did not tire so easily, and would return for further observation. He failed, however, to fulfil his engagement, and has sent no further communication.

Summary.—A patient, with clinical evidences of a disseminated lesion of the central nervous system, had a history of syphilis which was unconfirmed in the laboratory. After two months of general antisyphilitic treatment the Wassermann test was repeatedly negative, and no material change was noted in the clinical condition. Following two intradural doses of mercurialized serum, there was marked improvement in the clinical picture which had, for several months prior to treatment, shown no tendency to spontaneous recovery. After the third intradural treatment there was, with the exception of the reflexes, almost complete restoration of health, and, with minor exceptions, this persisted throughout a period of seven years.

CASE 2.—*History.*—R. B. R. (F. 84248), a man, aged 26, married, was admitted to the Johns Hopkins Hospital Dispensary, Oct. 30, 1917, complaining of "stiffness of the legs and walking wabbly." His mother died of tuberculosis, but the family history, in other respects, was without significance. He had always been "nervous" and, at the age of 14, suffered from typhoid fever followed by a "nervous breakdown." During the last five years there had been several attacks of malaria. A history of syphilis was not obtained, but he admitted numerous exposures and a gonorrheal infection nine years before. His wife was living and well, and had had two miscarriages, one at the third, and the other at the sixth month. Three children were living and in good health.

Present Illness.—For the last three years there had been increasing general nervousness, and in November, 1916, he first noticed repeated "tickling sensations" in the right leg, accompanied by occasional weakness of the right knee. These symptoms were shortly followed by attacks of pronounced giddiness, which had continued up to the present time, and had seriously interfered with his custom of riding a bicycle to and from his place of business. Two months before, stiffness and weakness developed in the left leg; and the gait became so unsteady that his friends accused him of being intoxicated. Since then the sight of both eyes had shown progressive impairment, more particularly in the right eye. There was no history of diplopia or speech defect. Sphincter control was retained, but he was relatively impotent.

Examination.—The pupils were equal, regular, and reacted promptly to light and during accommodation. Ocular movements were normal. Each nerve head was distinctly pale in its nasal half, and the impairment was greater in the right eye. Vision was defective in both eyes, but the right perimetric field showed a greater degree of constriction than the left. Speech was unaffected. There was pronounced intention tremor of both upper extremities. The tendon reflexes of the arms were equally exaggerated on the two sides.

Spasticity and ataxia were pronounced in the legs, and he could not stand or walk without support. The ataxia was intensified when the eyes were closed. Both knee jerks and both Achilles jerks were greatly exaggerated, and clonus was obtained at both ankles. Bilateral dorsal flexion of the great toe was elicited on plantar stimulation. Neither abdominal reflex was obtained. Sensation was objectively unimpaired.

On admittance to the Church Home and Infirmary for observation, physical examination of the thorax and abdomen revealed no abnormality. The blood picture and urinary and gastric analyses were normal. The spinal fluid was clear and colorless; pressure, 160 mm.; lymphocytes, 3; globulin, ++; Wassermann reaction, 0; gold chlorid test, 0; blood Wassermann reaction, 0.

Summary and Conclusion.—A young adult with no history of syphilis suffered from dizziness, tremor, defective vision, difficulty in walking and a moderate degree of impotence. Examination revealed beginning optic atrophy in both eyes, normally reacting pupils, intention tremor, spasticity and ataxia of both lower extremities, clonus, a bilaterally positive Babinski reflex, and loss of both abdominal reflexes. No evidence of syphilis was obtained from examination of the blood or spinal fluid. A tentative diagnosis of multiple sclerosis had been made in the dispensary, and this was, in part, confirmed by the subsequent laboratory studies.

Treatment and Subsequent Course.—Conditions arose which made it necessary for the patient to return home, and he was given a letter to his physician, Dr. F. D. Armstrong of Fort Myers, Fla., advising vigorous antisyphilitic treatment.

The following record is abstracted from reports which Dr. Armstrong has kindly furnished me at various intervals:

In the latter part of December, 1917, arsphenamin, 0.6 gm., was given intravenously. Reaction was intense, and all symptoms were aggravated for several days. Intramuscular injections of mercury were substituted for the arsphenamin, and thirteen successive treatments were administered. After the fifth dose an appreciable improvement was noted in the patient's condition, and on completion of the series, improvement was such that he could ride his bicycle to and from his place of business. The blood Wassermann test was negative. In June, 1918, a second dose of arsphenamin, 0.6 gm., was administered intravenously. This was again followed by a severe reaction and temporary recrudescence of all symptoms. One week later, improvement was more pronounced than at any previous time. Two more arsphenamin treatments, of 0.6 gm. each, were given; one in August, 1918, the other in May, 1919. Each of these was followed by a mild reaction, and continued improvement in the clinical condition.

May 21, 1919, the patient returned to Baltimore for reexamination. The eyes were said to be improved, and a visual test confirmed this statement. The optic nerve showed no change from that noted at the first examination. The gait was distinctly improved. The patient walked without assistance and with little or no spasticity. There was no tremor of the head or extremities. The tendon reflexes of the upper extremities were of normal intensity, but the deep reflexes in the legs were exaggerated on both sides. Ankle clonus was present on the right, none on the left. Plantar stimulation of the right foot produced dorsal flexion of the great toe, but on the left the response was invariably normal. The abdominal and cremasteric reflexes were not obtained. His condition was so improved that he returned to Florida without permitting further examination.

June 21, 1921, three years and eight months after the beginning of treatment, Dr. Armstrong wrote that the patient was not under his care at present, but that he was decidedly improved, worked every day and pushed a wheel about 2 miles back and forth from his work.

CASE 3.—*History.*—J. D. S. (G. 21152), a man, aged 31, single, admitted to the Johns Hopkins Hospital Dispensary, Oct. 25, 1919, complained of "paralysis of the legs and bad eyes." The family history was unimportant. The personal history was not reliable, but he thought that he had had the usual diseases of childhood, diphtheria at the age of 4, meningitis a year later, typhoid fever when 8 years of age, and influenza in 1919. A gonorrheal infection occurred at the age of 16, but he denied having had primary or secondary syphilis.

Present Illness.—In April, 1910, transitory numbness and tingling were experienced in the left hand, and six weeks later these symptoms appeared in the left leg, which later became progressively weak and stiff. Some time thereafter —the exact interval is not known—gradually increasing weakness of the right leg developed. Vision in the right eye began to fail in 1916, and several months later in the left eye. At present he could read only the largest print. The visual defect had shown periods of improvement, but the stiffness of the legs had steadily progressed. Recently, there had been some difficulty in voiding. A Wassermann test of the blood, in 1910, was reported as negative; but when the eyes began to fail, his oculist made a diagnosis of syphilis, and administered two intravenous doses of arsphenamin and a course of mercurial inunctions. On completion of this treatment no improvement was noticed in the clinical condition, and the Wassermann test of the blood was again reported as negative.

Examination.—On admission to the dispensary the following clinical notes were made by Dr. H. M. Thomas: The pupils were equal and moderately dilated, and both reacted to light. Nystagmus of the right eye was pronounced, but it was not so intense in the left. The right eye was practically blind, and the right optic nerve was pale. The entire nervehead of the left eye was white and the vessels were small. Speech was, perhaps, slightly impaired. The hands showed marked tremor. The deep reflexes in the arms were active on the two sides. The gait was distinctly spastic, but more so on the right side. While standing there was a tendency to fall backward, and this was intensified if the eyes were closed. Both knee jerks were exaggerated, and there was bilateral ankle clonus. Plantar stimulation and tibial irritation on either side caused dorsal flexion of the great toe. The abdominal reflexes were present, but feeble on the left side. Laboratory report from the department of syphilis was: spinal fluid: cells, 0; globulin, +; Wassermann reaction, 0; blood Wassermann reaction, 0.

The patient was admitted to the Church Home and Infirmary, Oct. 31, 1919, for further study and treatment. The neurologic examination verified the observations made by Dr. Thomas. The blood picture, urinary analysis, and renal functional tests were normal. There was absence of free hydrochloric acid in the gastric juice. The thorax and abdomen showed no abnormalities. The spinal fluid was clear and colorless; pressure, 120 mm.; lymphocytes, 8; globulin, +; Wassermann reaction, 0; gold chlorid test, paretic curve; blood Wassermann reaction, 0.

Summary and Conclusion.—The absence of a history of syphilis and inability to demonstrate its presence by the usual laboratory methods were important data in support of the clinical diagnosis of multiple sclerosis. Tremor, nystagmus, speech defect, optic atrophy, changes in the abdominal reflexes, and spastic paraplegia were the significant clinical features. The paretic gold curve is observed in conditions other than syphilis, and has been reported in genuine multiple sclerosis.

Treatment and Subsequent Course.—Intensive antisyphilitic treatment was adopted. Four intravenous doses of arsphenamin, 0.6 gm., were administered at weekly intervals. In each instance, on the succeeding day, serum containing 0.00130 gm. of mercuric chlorid was given intradurally. Following each treatment, transient improvement was noted in one or more symptoms, and on discharge from the hospital, Dec. 1, 1919, the following notes were made: The general condition has improved, the bladder is under better control, and vision in the left eye is said to be more acute. The gait is still very defective, but is perhaps better than before treatment, and the patient feels that he can now "return to work."

Dec. 24, 1919, he wrote: "I am indeed glad to advise you that I am better. My legs are stronger and I am able to work with the least effect on my legs than any time in a year. Have been doing outdoor work for exercise." Five months later he reported: "My condition is a trifle better than before treatment. My doctor thinks I should return for another series of treatments." Financial conditions prevented his return, and no further communication was received until April 15, 1921, when his physician, Dr. C. C. Hinton, of Macon, Ga., wrote that he had not seen the patient since August, 1920, and knew nothing of his present condition. Dr. Hinton is, however, of the opinion that no material improvement was derived from the arsenical and mercurial treatment, but that he secured beneficial results from the use of thyroid extract.

CASE 4.—*History.*—W. E. L., a man, aged 34, married, was referred by Dr. H. M. Thomas, June 22, 1920, from whose records the following history and examination are abstracted: The patient complained of difficulty in walking and defective vision in the right eye. The family history was unimportant. He was an only child, and was said to have always been nervous, and to have had the usual diseases of early life. A gonorrheal infection occurred at the age of 24, but there

was no history of syphilis. Following a severe tonsillar infection in 1909, there were several attacks of blurred vision over a period of a week or ten days, when he completely recovered. Six years later the visual disorder recurred, and was associated with numbness and motor disturbances in the right hand of several weeks' duration. A similar attack occurred in 1917, which his physician attributed to nicotin poisoning.

Present Illness.—With the exception of the recurrent visual disturbances, he dated the onset of his present illness from the fall of 1918, when he noticed occasional jumping of both legs, but more particularly of the right leg. Six months later both lower extremities gave way completely, and since then he had walked with great difficulty. The motor disability persisted, and in the latter part of 1919 was associated with numbness of the feet and general exhaustion. A lumbar puncture at that time was thought to have improved his condition slightly, but the result of the spinal fluid examination was not known. Sphincter control and sexual ability were unaffected.

Examination.—The left pupil was larger than the right, but both reacted to light and during accommodation. Large print could not be read with the right eye. Vision in the left eye was quite good. Both nerve heads were distinctly pale, and the pallor was more pronounced in the right eye. There was no definite nystagmus, but on extreme deviation of the eyes to the left there were a few nystagmoid movements. Speech was unaffected. Slight tremor was present in both extremities, but the finer movements of the hands were well performed. The deep reflexes in the arms were exaggerated. The gait was definitely ataxic, and not unlike that of the tabetic. The right leg showed some weakness in the flexors of the knee and the ankle. Neither abdominal reflex was obtained. The deep reflexes of the legs were exaggerated, and bilateral ankle and patellar clonus was present. Dorsal flexion of the great toe was obtained on each side. There were no sensory changes.

The patient was admitted to the Church Home and Infirmary, where the following additional studies were made: Physical examination of the thorax and abdomen revealed no abnormality. At times, the patient could not stand or walk without assistance, and the gait was markedly spastic and ataxic. The condition appeared to be advanced to so great a degree that little improvement was to be expected from any form of treatment. The blood, urinary and gastric analyses were normal. The spinal fluid was clear and colorless; pressure, 170 mm.; lymphocytes, 12; globulin, +; Wassermann reaction, 0; blood Wassermann reaction, 0.

Treatment and Subsequent Course.—The situation was fully explained to the patient and his family, both of whom were willing to accept the therapeutic experiment. Accordingly, two intravenous doses of the diarsenol brand of arsphenamin, 0.4 gm. each, and two intradural doses of mercurialized serum were administered. Following the second intravenous treatment, the patient was critically ill for thirty-six hours, and it was decided to discontinue further medication. He remained in the hospital ten days longer, but showed no improvement in his nervous symptoms.

Nov. 22, 1920, a letter from the patient's wife stated that the symptoms had steadily progressed; both arms were now affected, and he had no use of the legs.

Case 5.—*History.*—W. E. N., a woman, aged 22, married, was referred by a former patient, Sept. 7, 1914. Her illness of this date was unquestionably of syphilitic origin. From this she completely recovered, and several years later exhibited the clinical symptoms of multiple sclerosis.

The family history was unimportant, and the personal history was insignificant with the exception of the syphilitic disorder for which she first sought relief. She then complained of numbness of both lower extremities and difficulty in walking. The affection began four years previously, with a dragging sensation, weakness, and motor disability of both legs, but more particularly in the left leg. At first, these symptoms occurred periodically, in attacks of eight or ten days' duration, but always terminated in complete recovery. Recently, the disorder had been of greater frequency, of longer duration, and accompanied by shooting pains in the left leg and arm. Sphincter control had not been affected. Venereal infection was persistently denied.

The present attack, of Sept. 4, 1914, was said to be the most alarming, and she had since been unable to stand or walk without the support of two companions. Examination failed to disclose any abnormality of the pupils, cranial nerves, or upper extremities. There was no tremor, nystagmus or speech defect. Both lower extremities were spastic and ataxic, and suggestive dorsal flexion of the left great toe was occasionally obtained. Objective sensory changes were not demonstrable. The blood Wassermann reaction was strongly positive. Lumbar puncture was refused.

Three intravenous doses of arsphenamin, a course of mercurial inunctions and potassium iodid were followed by complete clinical recovery, and a negative Wassermann examination of the blood, Oct. 27, 1914. From this date to Dec. 8, 1919, ten Wassermann tests of the blood were made, at intervals of six months, and all were persistently negative. The spinal fluid was examined in June, 1915, and was normal in all respects. Each time the blood was secured a neurologic examination was made, but failed to demonstrate any abnormality. Thus, so far as could be determined, she remained perfectly well with entirely negative laboratory reports for a period of five and a half years.

Feb. 23, 1920, the patient returned for reexamination because "objects to the right and left danced in a rapid manner." There was very definite nystagmus of both eyes when looking in either lateral direction. This symptom was preceded by several attacks of intense dizziness, and blurring of vision. The blood Wassermann reaction was negative. Lumbar puncture was refused. The patient was referred to Dr. J. W. Downey for examination of the ocular and vestibular functions, who reported: "Continued rotary and horizontal nystagmus on looking to right. Vision, right eye, 18/16; left eye, 18/30. Pupils normal. Nerve heads apparently normal. Contraction of field for red. The left eye shows general contraction of both form and red fields. The eyes suggest beginning simple optic atrophy. Ears suggest intracranial irritation. The examination of the eyes and ears suggests multiple intracranial lesions." Dr. Downey reexamined the patient, May 1, 1921, when it was then learned that since the previous visit she had been perfectly well until two weeks before, since which time there had been repeated attacks of dizziness. There was, however, no nystagmus, but, with this exception, the condition of the eyes and ears remained unchanged.

Oct. 16, 1921, the vertigo continued to be a distressing symptom, and since September 11, pain, stiffness and numbness in the left arm had been noted. Examination revealed definite tremor of the left hand, which interfered with the performance of more delicate movements. Speech was unaffected. There was no nystagmus. All the tendon reflexes, with the exception of the left Achilles jerk, were exaggerated. The left abdominal reflex was not obtained, but a definite positive Babinski reflex was elicited when the right sole was stimulated. Sphincter control was said to be good. The blood Wassermann reaction was negative. Lumbar puncture was refused.

Summary and Conclusion.—A patient with demonstrable syphilis of the central nervous system responded promptly to antisyphilitic treatment, and remained clinically well five and a half years. During this period repeated Wassermann tests were persistently negative. Since then, with no history of any other illness, the following clinical features commonly observed in multiple sclerosis, were noted: vertigo, nystagmus, simple optic atrophy, tremor, changes in the abdominal reflexes, pain, paresthesia, exaggerated tendon jerks, and a positive Babinski toe sign. These symptoms were characterized by periods of remission, intermission and recrudescence. The blood Wassermann reaction remained negative. It is not improbable that the present disorder was of syphilitic origin. Although syphilis was not demonstrable, antisyphilitic therapy was recommended, but treatment and further laboratory study were refused. Had it not been possible to know the details of the case from the beginning, and were one to depend on the Wassermann test or a history of syphilis to establish the nature of the subsequent disorder, there is little doubt that

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it would be diagnosed as multiple sclerosis. Should, however, the recent symptoms be attributed to syphilis, the prolonged intermission of five and a half years presents a further analogy to the clinical course of multiple sclerosis, and at the same time illustrates the precaution necessary in pronouncing a "cure" in syphilis. If, on the other hand, the symptoms are those of true multiple sclerosis, it is difficult to exclude syphilis as an etiologic factor.

SYPHILIS AND MULTIPLE SCLEROSIS

There are, no doubt, features in the preceding clinical records on which one may defend the position that they are only instances of certain types of cerebrospinal syphilis; that a diagnosis of multiple sclerosis is not warranted, since there is a history of syphilis in the first case, a positive Wassermann reaction was obtained in the fifth patient, and the classical symptoms of nystagmus, scanning speech and intention tremor are not invariably present. The history of a venereal sore does not necessarily establish its syphilitic nature, nor does a negative laboratory report preclude the possibility of syphilis. The triad of Charcot has also been observed in unquestioned syphilis of the nervous system, and in multiple sclerosis it is often a late if not uncommon syndrome.

An early diagnosis of multiple sclerosis is to be desired, and not a few clinicians now claim that they recognize the disease in its incipient stages. Of the initial symptoms, much importance has been attached to the occurrence of optic atrophy, central scotoma for red, vertigo, loss of the abdominal reflex, sphincter and sexual disorders, spasticity, ataxia, and the reflex signs of pyramidal tract involvement. If among these symptoms there are to be found one or more features of the classical triad, and there is no laboratory evidence of syphilis, a diagnosis of multiple sclerosis is generally accepted without dispute; but all of these symptoms occur in syphilis, and there is no proof that they may not depend on an undemonstrable syphilitic infection.

The literature contains many instances of striking resemblances in the two diseases, and, at times, clinical distinction is quite impossible. A history of syphilis is, in Spiller's opinion, of little importance, since "it is probable that syphilis plays no part in the etiology of multiple sclerosis." Redlich,[4] Marburg, and Catola [5] refer to the occurrence of multiple sclerosis in earlier life, and assert that it has a more chronic course than syphilis; but juvenile and rapidly advancing types of both diseases have been described. Nevertheless, Marburg argues that juvenile multiple sclerosis is evidence of its nonsyphilitic nature. Sachs,[6] in 1891, regarded a history of syphilis, absence of Charcot's traid, the progress of the disease, and the therapeutic test as helpful distinguishing features, but later found them of little value, and concluded that a close study of the question suggests the possibility that the two diseases may be identical. Since then, Catola has described the classical triad in unquestioned syphilis with normally reacting pupils; but the pupils often react normally in syphilis, until late in the disease, and Spiller and Camp have recorded an instance of this kind. The patient had been presented in the clinic for many years as a case of multiple sclerosis. Syphilitic infection was persistently denied until shortly before death, when the Argyll Robertson pupil was also first noted. A clinical diagnosis of cerebrospinal syphilis was then made and later confirmed at necropsy. According to Sachs,[7] pupillary changes have been described in multiple sclerosis; but Marburg is of the opinion that the occurrence of the Argyll Robertson pupil in this disease is always a complication. He has, however, observed definite myosis; and Gowers [8] describes pupillary inequality, loss of accommodation, and more rarely abolition of the light reflex.

Loss of the adbominal reflex is usually regarded as one of the distinctive early signs of multiple sclerosis, and Söderbergh,[9] has recently made this symptom a subject of special study. It is, however, in Adams' [10] opinion only further evidence of the resemblance of syphilis to multiple sclerosis, since Head and Fearnside have shown that, in syphilis, the spinal roots most frequently involved are those from the seventh thoracic to the first lumbar; and it is within these segments that the abdominal reflex is located.

Heretofore much importance has been attached to the developmental or endogenous nature of multiple sclerosis; but within the last decade belief in its toxic or infectious origin has become increasingly popular, and recent studies on the inflammatory character of the lesions tend to confirm this opinion. The exciting agent has been attributed to almost every form of bacterial disease, and to various localized foci of infection; but in the earlier writings of Spiller, Sachs, Gowers, Redlich, and in all modern textbooks, syphilis is said to have no place in the etiology of multiple sclerosis. It appears, however, that Gowers is not entirely of this belief, for he states that "a second fact which deserves to be borne in mind, although its significance is obscure, is that the only lesion which resembles insular sclerosis in general distribution, and sometimes in characters, is one that is apparently quite distant from it in etiology, the disseminated inflammation in the central nervous system produced by syphilis"; but "different as the two processes are in their immediate pathology, they may possess some common relations in nature or causation."

A more tolerant opinion concerning the etiology of multiple sclerosis is entertained by Spiller, who in 1919 admitted that "there is also a possibility that at times syphilis may play a rôle, and opportunity is taken to consider the findings justifying this point of view"; and although an individual may suffer from a combination of the two diseases, "syphilis cannot be excluded as a cause." Catola, in 1906, arrived at a similar conclusion, and argued that if the infectious diseases and toxemias are of etiologic importance, there is no just reason for the exclusion of syphilis. He quotes the following from Déjerine and Thomas, who advised the use of mercury and iodids: "For," they say, "it has not been proved that multiple sclerosis is not referable to syphilis as a cause" (car, disent-ils, il n'est pas démontré que la sclérose en plaques ne puisse reconnaître la syphilis comme cause). This opinion has also been expressed by Wernicke, Moncorvo, Jacobsohn and Cestan-Verger; [11] and Catola further finds that in certain instances syphilis appears to be the only eti-

4. Redlich, E.: Multiple Sclerosis, Modern Clinical Medicine, Diseases of the Nervous System, New York, D. Appleton & Co., 1908, p. 557.
5. Catola, G.: Sclérose en plaques et syphilis, Nouv. Iconog. de la Salpêtrière **19**: 337 (July-Aug.) 1906.
6. Sachs, B.: Multiple Cerebrospinal Syphilis, New York M. J. **54**: 309, 1891.
7. Sachs, B.: The Relation of Multiple Sclerosis to Multiple Cerebrospinal Syphilis, and to Paralysis Agitans, Philadelphia M. J. **1**: 241, 1898.
8. Gowers, W.: Diseases of the Nervous System, Philadelphia, P. Blakiston's Son & Co. **2**: 543, 1906.
9. Söderbergh, G.: Abdominal Reflexes in Multiple Sclerosis, Acta. Med. Scandinav. **55**: 294 (June 17) 1921; Abstr. J. A. M. A. **77**: 744 (Aug. 27) 1921.
10. Adams, D. K.: The Cerebrospinal Fluid in Disseminated Sclerosis, Lancet **1**: 420 (Feb. 26) 1921.
11. Cestan-Verger.: Précis de pathologie interne, Paris, Masson et Cie **1**: 344, 1919.

ologic factor. The studies of Dawson [12] suggest that the disease is dependent on a specific infection, but fail to convince him that syphilis has any causative relation, although it may produce a syndrome very similar to that of disseminated sclerosis.

The disseminated syphilitic lesion bears a close resemblance to that of insular sclerosis. Sachs' statement, that "both processes invade the cerebral or spinal tissue but do not destroy it, at least not rapidly," may be true in certain instances, but later studies appear to contradict this opinion. It has been generally taught that the lesion of multiple sclerosis may be distinguished by the preservation of axis cylinders in the sclerotic area, and the absence of secondary degeneration; and caseation is said to be typical of the syphilitic lesion; but Gowers finds that when caseation is absent "the aspect of the lesions is scarcely distinguishable from that of sclerosis." Dawson asserts that the histologic changes in the two diseases are quite distinguishable, although "the anatomic features, once thought to be distinctive of disseminated sclerosis, may be the final stage of quite different processes." He admits, however, that a certain number of fibers undergo secondary degeneration in genuine insular sclerosis. Catola, Spiller and others have also described secondary degeneration and loss of axis cylinders in typical disseminated sclerosis; but Catola has observed typical syphilitic sclerosis in which there were preservation of the axis cylinders and the absence of secondary degeneration.

The cytology of the two diseases is often quite identical. In both, plasma cells, and lymphocytic perivascular, meningeal and radicular infiltrations have been observed. Klingman,[13] Wohlwill and Marinesco [14] have made a special study of the cellular reactions in multiple sclerosis, and find that the infiltrations are very similar to those of syphilis. In the specimens studied by Birley and Dudgeon,[15] cellular reactions, axon changes and secondary degeneration were of common occurrence. Schuster [16] has also made a significant observation. He finds, in certain cases of disseminated sclerosis, that the lesions are most commonly situated in what he calls the boundary zone of the cortex, and claims to have demonstrated *Spirochaeta pallida* in this zone, in a genuine case of multiple sclerosis. It was in this region, also, that the organism was most frequently observed in the paretic brain; and Igersheimer's [17] demonstration of *Spirochaeta pallida* in the atrophic optic chiasm in tabes and paresis deserves consideration.

The clinical laboratory has furnished rather contradictory evidence of the probable syphilitic nature of insular sclerosis. Marburg [18] states that in this disease the lymphocytes in the spinal fluid are either normal or only slightly increased; the globulin is positive in 45 per cent. of the cases; and a positive Wassermann test has been recorded in one instance. In two patients the serum Wassermann test was also positive. Similar observations have been made by Plaut, Sarr and Sarthof, and Spiller has reported as many as 200 lymphocytes per cubic millimeter in the spinal fluid. The Wassermann examination was not made. Burr [19] found the blood and spinal fluid Wassermann negative, but a paretic gold curve in one instance; and Ostheimer, in discussing this report, states that the paretic, luetic or tabetic gold curve is often observed in multiple sclerosis. The studies of Dawson, Marinesco, and Birley and Dudgeon gave no evidence of syphilis in any of the patients, but Marinesco refers to three instances in which Nonne obtained a positive Wassermann reaction. In the thirty-three cases of Birley and Dudgeon, the lymphocytes were not increased, the globulin was negative in twenty-nine instances, and a negative Wassermann reaction was obtained in the blood and spinal fluid in all cases. Adams has recently studied forty-one cases of multiple sclerosis, and found the paretic or luetic gold curve to be present in all but two cases, in which a subsequent diagnosis of arteriosclerosis was confirmed at necropsy. Lymphocytosis was not a prominent feature; the globulin was occasionally increased; and, with the exception of two questionable observations, no organisms were found in the dark-field examination of centrifugalized specimens. The Wassermann reaction was positive in both the blood and spinal fluid in four cases; in the blood only, in two cases; and in the spinal fluid alone in three instances.

Within the last eight years, multiple sclerosis has been subject to experimental investigation in an effort to establish its infectious nature and the character of the specific organism; but thus far the results have been inconclusive. Bullock [20] claims to have first transmitted the disease from man to the lower animals. The experiments are, however, not convincing. Four years later, Kuhn and Steiner demonstrated a flexible protozoon in the blood of animals injected with the spinal fluid or blood of multiple sclerotic patients. Similar observations have since been reported by Simons, Rothfeld, Freund and Hormowski; and Gye [21] has more recently repeated his inoculation of lower animals with equally unconvincing results. By ultra-microscopic methods, Siemerling has discovered in the nervous tissue of patients suffering from insular sclerosis an organism which, similar to that isolated by Kuhn and Steinder, is thought to be related to, but not identical with, *Spirochaeta pallida*. Speer [22] also has observed an actively motile spirochete in the macerated nervous tissue, and Marinesco, in 1919, obtained a similar parasite from the spinal fluid of animals previously injected with the spinal fluid of sclerotic patients. He repeated the experiment several months later, using the fluid of the same patient, but the result was entirely negative. It was concluded that the spinal fluid of patients with multiple sclerosis either does not contain the organism at all times, or that it is present in an attenuated form. The experiments of Birley and Dudgeon appear, however, to contradict the claims of their predecessor. Only those patients in whom there were clinical evidences of a recent or progressive lesion were selected; but in no instance were they able to transmit the disease, or to demonstrate a specific organism.

12. Dawson, J. W.: The Histology of Disseminated Sclerosis, Edinburgh M. J. **17**: 229 (Oct.), 311 (Nov.), 377 (Dec.) 1916.
13. Klingman, T.: The Histogenesis of Multiple Sclerosis, Arch. Neurol. & Psychiat. **1**: 39 (Jan.), 193 (Feb.) 1919.
14. Marinesco, G.: Etude sur l'origine et la nature de la sclérose en plaques, Rev. neurol. **26**: 481 (June) 1919.
15. Birley, J. L., and Dudgeon, L. S.: A Clinical and Experimental Contribution to the Pathogenesis of Disseminated Sclerosis, Brain **44**: 150 (July) 1921.
16. Schuster, G.: Spirochaetes in the Aetiology of Certain Paralyses, Lancet **1**: 21 (Jan. 1) 1921.
17. Igersheimer, J.: Spirochätenbefunde an der Sehbahn bei Paralyse, Deutsch. med Wchnschr. **47**: 738 (June 30) 1921.
18. Marburg, O.: Multiple Sklerose, in Lewandowsky: Handbuch der Neurologie, Berlin, Julius Springer **2**: Spezielle Neurologie **1**: 911, 1911.
19. Burr, C. W.: Two Cases of Multiple Sclerosis, Arch. Neurol. & Psychiat. **5**: 767 (June) 1921.
20. Bullock, W. E.: The Experimental Transmission of Disseminated Sclerosis to Rabbits, Lancet **2**: 1185, 1913.
21. Gye (formerly Bullock), W. E.: The Experimental Study of Multiple Sclerosis, Brain **44**: 213 (July) 1921.
22. Speer, E.: Spirochatenfund im menschlichen Centralnervensystem bei multipler Sklerose, München. med. Wchnschr. **68**: 425 (April 8) 1921.

Thus, while the etiology of the disease remains unknown, evidence is accumulating which suggests its inflammatory nature and probable organismal origin. The experimental studies have, however, neither proved nor entirely excluded its probable relation to syphilis. Nevertheless, the clinical and pathologic analogy of the two diseases, and the probability of a closely related, if not identical etiology, have encouraged the experimental adoption of antisyphilitic therapy. Perrin,[23] in 1920, reported promising results from the intravenous use of neo-arsphenamin in a multiple sclerotic who had shown no improvement from the use of other therapeutic agents. In Burr's case the patient developed convulsions and monoplegia following an intradural dose of arsphenamized serum. Adams has had a more extensive experience. He records the treatment of forty-one cases of multiple sclerosis by antisyphilitic methods. Some of the patients received as many as twenty intravenous doses of arsenic, supplemented, in most instances, by intramuscular injections of mercury. Thirteen of the patients showed definite improvement. The gold chlorid test of the spinal fluid was made at repeated intervals, in sixteen of the patients, and gave the reaction of the paretic, syphilitic or tabetic curves. He concludes that treatment, to be effective, must be begun early. Kalberlah[24] has arrived at a similar conclusion from the use of silver arsphenamin in the treatment of thirty-six patients. Thus, while my own experience with the antisyphilitic treatment of multiple sclerosis is not extensive, the prolonged period through which the patients have been observed, and the probable advantage to be derived from the use of intradural therapy, may be offered as an apology for this preliminary report.

CONCLUSIONS

No organic disease of the central nervous system so closely resembles syphilis in its symptomatology and pathology as does multiple sclerosis.

In all probability, the lesion in insular sclerosis is of an inflammatory nature. The cellular reactions are quite similar to those of syphilis; and, with the exception of the Wassermann test, the spinal fluid exhibits changes comparable to those in the vascular and gummatous types of cerebrospinal syphilis.

Failure to demonstrate *Spirochaeta pallida*, or to secure a positive Wassermann reaction in all cases, is no proof that syphilis may not be an etiologic factor. Evidence of this nature is not infrequently wanting in tabes dorsalis, and occasionally in general paresis. A positive Wassermann reaction in multiple sclerosis does not, however, establish its specific nature, since the two affections may exist simultaneously, or else the disease is, in such instances, syphilis and not multiple sclerosis.

The therapeutic test is of no value as a diagnostic measure, since ineffectual treatment does not disprove a syphilitic factor, nor does effective therapy establish its presence. Tabes does not always respond to antisyphilitic therapy, and in general paresis the results are most discouraging. Thus, in the antisyphilitic treatment of multiple sclerosis, it may be argued that the affection is probably syphilitic; that there is a combination of the two diseases; that the intermission is spontaneous, or that the arsenical and mercurial preparations are useful drugs in the treatment of multiple sclerosis.

Although syphilis may not be an etiologic factor, there are undoubtedly clinical types of disseminated syphilis that are indistinguishable from insular sclerosis; and until the etiology of the latter disease is established, or a more acceptable form of therapy devised, the adoption of antisyphilitic treatment is worthy of consideration. Treatment is more likely to be effective if begun early, and both intravenous and intradural medication are recommended. Mercury and the iodids may also be prescribed to advantage.

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23. Perrin, M.: Sclérose en plaques et novarsenothérapie, Rev. méd. de l'Est, July 15, 1920, p. 423; abstr. Rev. neurol. 28: 330, 1921.
24. Kalberlah, F.: Etiology and Therapy of Multiple Sclerosis, Berl. klin. Wchnschr. 58: 963 (Aug. 15) 1921; abstr. Arch. Neurol. & Psychiat. 7: 128 (Jan.) 1922.

MEDICOLEGAL APPLICATION OF HUMAN BLOOD GROUPING

SECOND COMMUNICATION

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In 1910, von Dungern and Hirschfeld[1] discovered that the substances A and B present in human red blood cells (on whose presence or absence the so-called blood grouping depends) are inherited according to Mendel's law. They studied 348 persons belonging to seventy-two different families. (The families were those of university professors or members of their research institute, and each family is identified in their article.)

They observed that:

1. A never occurs in a child if not present in one of the parents; the same is true of B.
2. When one of these substances is present in both parents, it occurs in most of the children.
3. When only one parent has one of these particular substances, some of the children inherit it.
4. When a particular substance is absent from both parents, no child ever has it.

They were forced to the conclusion that Mendel's law holds for these blood qualities, on the supposition that they were dealing with two pairs of unit characters—A and Absent A, B and Absent B. They found their facts explicable only on the assumption that the presence of A is dominant over its absence (or "not A") and the presence of B over its absence (or "not B").

This conclusion was further fully supported by numerous other considerations which the analysis of their data afforded. They close by saying: "The fact that the demonstrable substances A and B in the blood cells can never appear in the children, if absent in both parents, is forensically available."

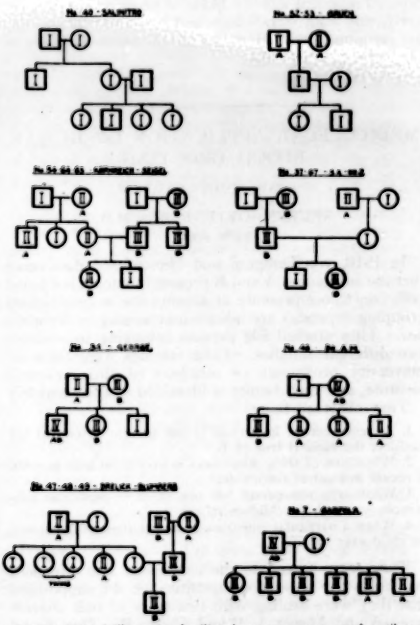
The facts of von Dungern and Hirschfeld have never been questioned. In two families on which I had previously reported, and in eight subsequently examined, there was not a single exception to their rules. When, therefore, in 1921 the subject again became of interest to me, I wrote an article in which are explicitly worked out the special conditions under which the observations of von Dungern and Hirschfeld could be applied in a medicolegal case.

In this article[2] the A B terminology, used by von Dungern and Hirschfeld, is translated into the four blood group terminology of Jansky, which is more

1. Von Dungern and Hirschfeld: Ztschr. f. Immunitätsforsch. Orig. 6: 284, 1910.
2. Ottenberg, Reuben: J. Immunol. 6: 343 (Sept.) 1921.

familiar to American readers and has been officially adopted [3] by the American Association of Immunologists, the Society of American Bacteriologists and the Association of Pathologists and Bacteriologists.[4] A short report [5] giving the conclusions of this article was published in The Journal, Aug. 27, 1921.

ILLUSTRATIVE FAMILIES



In this chart of illustrative families, by an error not noted until too late for correction, the square and the circle representing father and mother in the second generation of Family 37-67 were reversed.

Early in this year there appeared an article by Dr. J. A. Buchanan.[6] It contained eight charts, none of which is identified as representing an actual family. From the context, however, and the opinions expressed by the author, it seems necessary to assume that some of the charts are based on actual observation. The author, however, does not present the data on which he relies in condemning as incorrect the conclusions of von Dungern and Hirschfeld and myself.

3. Isohemagglutination, J. A. M. A. **76**: 130 (Jan. 8) 1921.

4. To refresh the memories of readers, A and B are the substances in human red cells which make them susceptible to agglutination by the human serum agglutinins α and β.
The red cells of Group I have neither A nor B.
The red cells of Group II have A.
The red cells of Group III have B.
The red cells of Group IV have A and B.
The serum of Group I has α and β.
The serum of Group II has β.
The serum of Group III has α.
The serum of Group IV has neither α nor β.
The A B terminology here used is that of von Dungern and Hirschfeld. In many textbooks the A and B are reversed, the letter B being used for Group II agglutinogen and the other letters changed accordingly. The final result is the same.

5. Ottenberg, Reuben: Medicolegal Application of Human Blood Grouping, J. A. M. A. **77**: 682 (Aug. 27) 1921.

6. Buchanan, J. A.: Medicolegal Application of the Blood Group, J. A. M. A. **78**: 89 (Jan. 14) 1922.

As no data have been recorded [7] since the original publication of von Dungern and Hirschfeld, I wish to present briefly sixty-seven additional families (255 persons). Twenty-six of these families were examined in various hospitals in the last two years as a part of hospital routine, incident to blood transfusion, and the results were kindly furnished to me by the men in whose laboratories the tests had been made.[8] The remaining families were examined by myself. The accompanying tables represent all the families examined, numbered in their original order from one to sixty-seven.

In my previous papers, I stated that when both parents were in Group I, all the children must be in Group I. In Table 1 are all of the families examined in which both parents were in Group I.

In my previous papers, I stated that when both parents belong to Group II, there can be only two

TABLE 1.—OBSERVATIONS OF FAMILIES IN WHICH BOTH PARENTS WERE IN GROUP I

Family No.	Name	Source	Individuals	Age of Child	Group	Agglutinable Substances	
14	Zanker	Mount Sinai Hospital	Father	....	I	—	—
			Mother	....	I	—	—
			Harold	....	I	—	—
17	Mazzola	Mount Sinai Hospital	Father	....	I	—	—
			Mother	....	I	—	—
			Samuel	....	I	—	—
22	MacGruder	Vanderbilt Clinic	Father	....	I	—	—
			Mother	....	I	—	—
			Earl	8 yrs.	I	—	—
			Gladys	7 yrs.	I	—	—
			Ruby	3 yrs.	I	—	—
			Hilda	2 yrs.	I	—	—
			Baby	2 mos.	I	—	—
25	Liebert	Presbyterian Hospital	Father	....	I	—	—
			Mother	....	I	—	—
			Robert	....	I	—	—
26	Demos	Presbyterian Hospital	Father	....	I	—	—
			Mother	....	I	—	—
			Tony	....	I	—	—
39	Breslow	Acquaintance	Father	....	I	—	—
			Mother	....	I	—	—
			Diana	6 yrs.	I	—	—
40	Salinitro	Acquaintance	Maternal grandfather		I	—	—
			Maternal grandmother		I	—	—
			Their son	....	I	—	—
			Their daughter	....	I	—	—
			Her husband	....	I	—	—
			Grandchildren				
			Rose	12 yrs.	I	—	—
			Louis	12 yrs.	I	—	—
			Mariam	7 yrs.	I	—	—
			Adele	9 yrs.	I	—	—
42	Sokol	Nursery and Child's Hospital	Father	....	I	—	—
			Mother	....	I	—	—
			Child	....	I	—	—
43	Tiedemann	Nursery and Child's Hospital	Father	....	I	—	—
			Mother	....	I	—	—
			Child	....	I	—	—
50	Wolff	Personal	Maternal grandfather		I	—	—
			Maternal grandmother		I	—	—
			Father	....	I	—	—
			Mother	....	I	—	—
			Robert	6 yrs.	I	—	—
			James	3 yrs.	I	—	—
53	Grues	Personal (The paternal grandparents are family 52 Table 2)	Father (Toby)	....	I	—	—
			Mother	....	I	—	—
			Dorothy	14 yrs.	I	—	—
			Robert	8 yrs.	I	—	—
59	Klaw	Personal (Maternal grandparents, see No. 56, Table 5)	Father	....	I	—	—
			Mother (Alma)	....	I	—	—
			Stanley	3 yrs.	I	—	—

possible kinds of children—Group II and Group I. In Table 2 are all families examined in which both parents were of Group II.

7. In the Helsingfors Letter (J. A. M. A. **77**: 1668 [Nov. 19] 1921) the correspondent, describing the Congress of Northern Pathologists, held in Stockholm, August 29 and 30, says: "Jervell of Christiania had continued examinations started by von Dungern and Hirschfeld in 1910 in regard to the iso-agglutinins and the corresponding receptors, and the agglutinogens A and B. . . . He was able to confirm the earlier findings."

8. I am indebted to Dr. Humphries, Dr. Famulener, Dr. Mandlebaum and Dr. Astrowe.

Likewise, it was stated that when both parents were of Group III the children would all be III or I (Table 3).

TABLE 2.—OBSERVATIONS OF FAMILIES IN WHICH BOTH PARENTS WERE IN GROUP II

Family No.	Name	Source	Individuals	Age of Child	Group	Agglutinable Substances
4	Hatenback..	Nursery and Child's Hospital	Maternal grandmother		II	A —
			Mother	....	II	A —
			Father	....	II	A —
			Child	3 yrs.	I	— —
12	Sinsheimer...	Mount Sinai Hospital	Father	....	II	A —
			Mother	....	II	A —
			Joseph	....	II	A —
19	Auslander....	Acquaintance	Father	....	II	A —
			Mother	....	II	A —
			Donald	....	II	A —
			Brother	....	II	A —
31	Appel.....	Acquaintance	Father	....	II	A —
			Mother	....	II	A —
			Judith	15 yrs.	II	A —
33	Dr. F.....	Acquaintance	Father	....	II	A —
			Mother	....	II	A —
			Arthur	18 yrs.	II	A —
			Harold	17 yrs.	II	A —
			Thelma	15 yrs.	II	A —
41	McLean.....	Nursery and Child's Hospital	Father	....	II	A —
			Mother	....	II	A —
			Girl	10 yrs.	II	A —
51	Schaeffer....	Nursery and Child's Hospital	Father	....	II	A —
			Mother	....	II	A —
			Child	....	II	A —
52	Gruen.....	Personal (Grandchildren, see No. 53, Table 1)	Father	....	II	A —
			Mother	....	II	A —
			Toby	33 yrs.	I	— —
62	Michaels.....	Acquaintance	Maternal grandfather		II	A —
			Maternal grandmother		II	A —
			Moses (their son)	23 yrs.	I	— —
			Esther (their daughter)	25 yrs.	I	— —
			Mrs. Marlow (married daughter)	....	II	A —
			Mr. Marlow (her husband)	....	II	A —
			Bernice (grandchild)	4 yrs.	II	A —
61	Benjamin....	Acquaintance	Father	....	II	A —
			Mother	....	II	A —
			Jewel	16 yrs.	II	A —
			John	14 yrs.	II	A —

TABLE 3.—OBSERVATIONS OF FAMILIES IN WHICH BOTH PARENTS WERE IN GROUP III

Family No.	Name	Source	Individuals	Age of Child	Group	Agglutinable Substances
16	Wilson.....	Mount Sinai Hospital	Father	....	III	— B
			Mother	....	III	— B
			Thomas	....	I	— —
22	Berkelheimer	Acquaintance	Father	....	III	— B
			Mother	....	III	— B
			Sadie	24 yrs.	III	— B
			Isidor	23 yrs.	III	— B
55	J. H.....	Personal	Father	....	III	— B
			Mother	....	III	— B
			Zillah	27 yrs.	III	— B
			Hannah	25 yrs.	III	— B
			Arthur	20 yrs.	III	— B
			Rosalind	16 yrs.	III	— B

In my previous papers it was stated that when the parents were of Group I and II, the children would all belong to Group I or II (Table 4).

Likewise it was stated that, when the parents were of Groups I and III, the children would all belong to one of these two groups (Table 5).

"All unions containing a member of Group IV, and unions of II and III may give rise to offspring of any of the four groups" (Table 6).

On going over the families, one sees several which bring out in a striking way the mechanism of inheritance. Thus, the Garfola family (Table 6, Family 7), in which all the children belong to groups different from those of the parents, can be explained only on von Dungern and Hirschfeld's hypothesis. The two agglutinogens A and B, combined in one parent and absent from the other, appear separately in the children. The same phenomenon occurs in the Dr. A. M. family (Table 6, Family 46). The reverse occurs in the George family (Table 6, Family 34), in which the two agglutinogens, only one of which is represented in each parent, are combined in one of the children.

In the case of the Garfola family, the examination occurred in such a way that one of the tests of a

TABLE 4.—OBSERVATIONS OF FAMILIES IN WHICH PARENTS WERE IN GROUPS I AND II

Family No.	Name	Source	Individuals	Age of Child	Group	Agglutinable Substances
3	Wolf.....	Acquaintance	Father	....	I	— —
			Mother	....	II	A —
			Louis	13 yrs.	I	— —
			Joseph	9 yrs.	I	— —
			Beatty	7 yrs.	I	— —
			Samuel	5 yrs.	II	A —
6	Smith.....	Vanderbilt Clinic	Father	....	I	— —
			Mother	....	II	A —
			Ruth	5 yrs.	II	A —
			Roberta	2½ yrs.	II	A —
8	Pearl.....	Mount Sinai Hospital	Father	....	II	A —
			Mother	....	I	— —
			Ruth	....	II	A —
9	Block.....	Mount Sinai Hospital	Father	....	I	— —
			Mother	....	II	A —
			Mamie	....	II	A —
10	Piermont....	Mount Sinai Hospital	Father	....	I	— —
			Mother	....	II	A —
			August	....	I	— —
15	Cohen.....	Mount Sinai Hospital	Father	....	II	A —
			Mother	....	I	— —
			Harry	....	II	A —
20	Millner.....	Acquaintance	Father	....	II	A —
			Mother	....	I	— —
			Selma	11 yrs.	II	A —
			Toby	9 yrs.	II	A —
21	Rudd.....	St. Luke's Hospital	Father	....	II	A —
			Mother	....	I	— —
			Child	....	I	— —
27	Gambleri....	Presbyterian Hospital	Father	....	I	— —
			Mother	....	II	A —
			Maud	14 yrs.	II	A —
28	Paull.....	Presbyterian Hospital	Father	....	II	A —
			Mother	....	I	— —
			Daughter	....	II	A —
			Daughter	....	II	A —
			Daughter	....	I	— —
30	Adler.....	Acquaintance	Father	....	II	A —
			Mother	....	I	— —
			Daughter	....	II	A —
29	Respoli.....	Vanderbilt Clinic	Father	....	I	— —
			Mother	....	II	A —
			Irene	14 yrs.	I	— —
			Amelio	12 yrs.	II	A —
			Concetta	10 yrs.	II	A —
			James	7 yrs.	I	— —
			Susan	3 yrs.	I	— —
35	Silverson....	Acquaintance	Father	....	I	— —
			Mother	....	II	A —
			Daughter	12 yrs.	I	— —
			Son	8 yrs.	I	— —
47	Drelick.....	Acquaintance (Grandchild, see No. 48, Table 5)	Father	....	II	A —
			Mother	....	I	— —
			Freda (Twins)	15 yrs.	I	— —
			Lillian (Twins)	15 yrs.	I	— —
			Rebecca	17 yrs.	II	A —
			Sadie	23 yrs.	I	— —
			Mrs. Blumberg	27 yrs.	I	— —
64	Kornreich....	Acquaintance (Grandchildren, see No. 65, Table 6)	Father	....	I	— —
			Mother	....	II	A —
			Martin	16 yrs.	II	A —
			Lena	25 yrs.	I	— —
			Mrs. F. Siegel	28 yrs.	II	A —
66	May.....	Personal	Father	....	II	A —
			Mother	....	I	— —
			Marjorie	15 yrs.	I	— —
			Betty	10 yrs.	II	A —
			James	7 yrs.	I	— —
67	S. A.....	Personal (Paternal grandparents of No. 37, Table 5)	Father	....	II	A —
			Mother	....	I	— —
			Herbert	....	I	— —

scientific theory, i. e., its ability to foretell as yet unascertained facts, could be put to a trial. I visited and tested the mother and the three youngest children in the morning, and on finding that the mother was in Group I (no A or B) and the children either in Group III (substance B) or in Group II (substance

A), was able to say definitely that the father must be in Group IV (A B), because, as the mother had neither of the two dominant substances present in the children, the father must have both of them. The blood of the father was obtained the evening of the same day and the prediction verified. Analogous predictions could have been made under suitable circumstances in many of the families.

TABLE 5.—OBSERVATIONS OF FAMILIES IN WHICH PARENTS WERE IN GROUPS I AND III

Family No.	Name	Source	Individuals	Age of Child	Group	Agglutinable Substances	
5	Hearn	Vanderbilt Clinic	Father	....	III	—	B
			Mother	....	I	—	—
			Fred	8 yrs.	III	—	B
			Vincent	3½ yrs.	III	—	B
			Maynard	2½ yrs.	I	—	—
			Charles	1 yr.	I	—	—
11	Fuchs	Mount Sinai Hospital	Father	....	III	—	B
			Mother	....	I	—	—
			Jacob	....	I	—	—
18	Dubrow	Mount Sinai Hospital	Father	....	I	—	—
			Mother	....	III	—	B
			Sidney	....	I	—	—
23	W.B.	Dr. N. Rosenthal	Father	....	III	—	B
			Mother	....	I	—	—
			Daughter	....	III	—	B
			Daughter	....	III	—	B
24	Schmitt	Presbyterian Hospital	Father	....	III	—	B
			Mother	....	I	—	—
			Child	....	I	—	—
36	Mikulet	Acquaintance	Father	....	I	—	—
			Mother	....	III	—	B
			William	11 yrs.	I	—	—
37	Dr. J. (Paternal grandparents No. 67, Table 4)	Personal	Maternal grandfather		I	—	—
			Maternal grandmother (= Mrs. A.)	....	III	—	B
			Father, Herbert A.	....	I	—	—
			George	....	I	—	—
			Amy	3 yrs.	III	—	B
38	Dr. L. S.	Acquaintance	Father	....	III	—	B
			Mother	....	I	—	—
			Abraham	3 yrs.	III	—	B
48	Blumberg (Grandparents; see No. 47, Table 4 and No. 49, Table 6)	Acquaintance	Father	....	III	—	B
			Mother	....	I	—	—
			Ruth	3 yrs.	III	—	B
54	Siegel (Grandchildren, see No. 65, Table 6)	Personal	Father	....	I	—	—
			Mother	....	III	—	B
			Fred	30 yrs.	II	A	—
			Louis	23 yrs.	III	—	B
56	Ash (Daughter = mother of No. 50, Table 1)	Personal	Paternal grandfather		I	—	—
			Paternal grandmother		III	—	B
			Alma, daughter	....	I	—	—
			Edward, their son	....	III	—	B
			Mrs. A., his wife	....	I	—	—
			Mark	3 yrs.	III	—	B

No fact has at any time been observed by me which fails to conform to the theory of von Dungern and Hirschfeld or to the conclusions of my previous papers. It is worth pointing out that for medicolegal purposes it is not necessary to employ or even to understand the mendelian theory. One can simply state the accumulated evidence at present available (consisting of 603 persons in 139 families), thus: Substance A, which is nothing but susceptibility of the red blood corpuscles to agglutination by any Group III serum, and Substance B (susceptibility to Group II serum) never appear in a child unless present in one of the parents. From this all the inferences presented in my previous paper may be derived.

Unless Buchanan publishes his data, it will not be possible to consider his opinions critically. It is, however, necessary to discuss his paper because of the importance of correcting any mistaken impression which it may have conveyed.

Buchanan's difficulties arise primarily from omission to consider the work of previous investigators. He says:

> Moss demonstrated in 1909 that three agglutinins and three agglutinogens are necessary to permit the existence of four blood groups. The work of Moss remains uncontradicted. . . . In my investigation of the inheritance of the blood groups I have discarded the use of *a* and *b* and *A* and *B*.

As a matter of fact, the existence of *α*, *β*, A and B, first postulated by Landsteiner, the discoverer of the blood groups in 1901, has been recognized by practically all of the large number of workers in the field except Moss. The three agglutinin idea was never put forward by Moss as a fully developed theory but only as a suggestion. The facts presented by Moss in 1909 in no way contradict Landsteiner's theory, and exact confirmation of the actual existence of the two agglutinins with two corresponding agglutinogens was published in 1902 by Descatello and Sturli, in 1920 by Koeckert, in 1921 by Schutze, in 1920 by Unger, and in 1921 by Hooker and Anderson.[9] Indeed, the demonstration of these substances is so easy that for years it has been a class exercise in the course on immunology in the College of Physicians and Surgeons, New York, in which course I have had the pleasure of acting as assistant.

TABLE 6.—OBSERVATIONS OF FAMILIES IN WHICH THERE WERE UNIONS CONTAINING A MEMBER OF GROUP IV, OR UNIONS OF GROUPS II AND III

Family No.	Name	Source	Individuals	Age of Child	Group	Agglutinable Substances	
			Parents of Groups I and IV				
7	Garfola	Vanderbilt Clinic	Father	....	IV	A	B
			Mother	....	I	—	—
			Julia	17 yrs.	III	—	B
			Daniel	13 yrs.	III	—	B
			Michael	8 yrs.	III	—	B
			Tony	6 yrs.	III	—	B
			Salvator	5 yrs.	II	A	—
			Charles	2 yrs.	II	A	—
40	Dr. A. M.	Personal	Father	....	I	—	—
			Mother	....	IV	A	B
			Phillip	20 yrs.	III	—	B
			Sarah	24 yrs.	II	A	—
			Dorothy	22 yrs.	II	A	—
			Abraham	26 yrs.	II	A	—
			Parents of Groups II and III				
34	George	Vanderbilt Clinic	Father	....	II	A	—
			Mother	....	III	—	B
			Ormond	6 yrs.	IV	A	B
			Lillian	2 yrs.	III	—	B
			Herbert	7 mos.	I	—	—
49	Blumberg (Grandchild, No. 48, Table 5)	Acquaintance	Father	....	III	—	B
			Mother	....	II	A	—
			Son	33 yrs.	III	—	B
65	Siegel (Grandparents, No. 54, Table 5 and No. 64, Table 4)	Acquaintance	Father (Fred)	....	III	—	B
			Mother (nee Kosreich)	....	II	A	—
			Betty	6 yrs.	III	—	B
			Erwin	3 yrs.	I	—	—
			Parents of Groups II and IV				
2	Wisler	Personal	Paternal grandmother		III	—	B
			Father	....	IV	A	B
			Mother	....	II	A	—
			Son	6 yrs.	II	A	—
			Son	3 yrs.	IV	A	B
13	Wolfson	Mount Sinai Hospital	Father	....	II	A	—
			Mother	....	IV	A	B
			Lilly	....	II	A	—
44	Leichterman	Nursery and Child's Hospital	Father	....	II	A	—
			Mother	....	IV	A	B
			Child	....	IV	A	B
45	Lapidus	Mount Sinai Hospital	Father	....	IV	A	B
			Mother	....	II	A	—
			Dorothy	....	II	A	—
60	Schaap	Acquaintance	Father	....	II	A	—
			Mother	....	IV	A	B
			Daughter	9 yrs.	II	A	—
			Parents of Groups III and IV				
1	Hinchliffe	Personal	Father	....	IV	A	B
			Mother	....	III	—	B
			Joseph	4 yrs.	IV	A	B

Buchanan's opinions can only be explained as due to a misinterpretation of the work of von Dungern and Hirschfeld. Neither they nor I ever implied that "the blood group of the child must be evident in

9. Hooker and Anderson: J. Immunol. **6**: 419 (Nov.) 1921: an experimental study so complete that it will probably remain the conclusive word on the subject.

the parents." On the contrary, their explanation exactly and completely accounts for those instances (of which they present a number and of which seventeen others occur in my table) in which the child's group is different from that of either parent. Inspection of Buchanan's charts (his Figures 1 and 8), on the basis of which he claims that a child would have been falsely declared illegitimate, shows that such would not have been the case; his instances definitely belong, according to the observations of von Dungern and Hirschfeld as tabulated by me, among those in which no conclusions as to legitimacy can be made.

Students of genetics do not agree with him that the character of inheritance can never be ascertained without a study of three generations. In the investigations in which the mechanism of inheritance was originally discovered by Mendel, it was necessary to observe three generations. But since the nature of mendelian dominance and recessiveness has been understood there have been numerous instances in which two generations have given all the possible combinations, and it has been easy to identify the mendelian nature of an inherited character by inspection.[10] However, a number of three generation families are presented herewith, and all bear out the previous conclusions, which had been based principally on two generation data.

CONCLUSION

The facts submitted fully support von Dungern and Hirschfeld's conception of the heredity of the blood groups, and its medicolegal application.

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QUINIDIN IN THE TREATMENT OF THE CARDIAC IRREGULARITIES *

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Since Frey [1] discovered the remarkable action of quinidin on auricular fibrillation in 1918, more than 300 reported cases have been treated by this drug. According to the available literature, 241 cases have been reported in foreign journals, and ninety-two in this country. In slightly more than 50 per cent., the sinus rhythm has been restored. In most instances, the normal auricular mechanism was of short duration. So far, the action of quinidin on the other types of cardiac irregularities has apparently received very little attention. Von Bergmann [2] and others observed that auricular premature contractions frequently appeared following the establishment of the sinus rhythm by quinidin. The former believed that further administration of quinidin eliminated or decreased the frequency of the premature contractions. Boden and Neukirk [3] reported encouraging results in the treatment of premature contractions and simple paroxysmal tachycardia with quinidin. White, Marvin and Burwell [4] have recently mentioned one instance of ventricular premature contraction in which the irregularity disappeared following the administration of small doses of quinidin and recurred soon after the medication was stopped. These observations were apparently repeated several times with the same results.

The present report is based on the treatment of fifteen cases of auricular fibrillations, twenty of premature contractions and two of simple paroxysmal tachycardia with quinidin sulphate. An initial dose of 0.2 gm. (3 grains) was given to determine whether or not there was susceptibility to the drug. In the twelve instances of well established auricular fibrillation, the dose was increased to 0.4 gm. (6 grains), three times a day. In three, a few doses of 0.5 gm. (7½ grains) were given. In the six patients in whom the sinus rhythm was restored, the medication was stopped in three and decreased to 0.2 gm. twice a day in the remaining three. The quinidin was discontinued in those who were apparently refractory to the treatment after a period of from five to seven days. In two, toxic symptoms appeared on the fifth and seventh days, respectively. The three patients with paroxysmal auricular fibrillation, those with premature contractions and the two with simple paroxysmal tachycardia received in the beginning 0.2 gm., three times a day. This was afterward reduced to twice a day and was later discontinued in some instances for intervals of from ten days to three weeks.

AURICULAR FIBRILLATION

In the twelve with the well established auricular fibrillation, the heart was well compensated. Each patient had had one or more attacks of cardiac failure. One had recently recovered from a cardiac upset. All had been taking digitalis. Seven had mitral stenosis and regurgitation. One had, in addition, hyperthyroidism. In three of these, the transverse diameter of the heart was markedly increased. One patient came to the hospital because of exophthalmic goiter. In five, the basic pathologic condition was apparently arteriosclerosis. Three of these had hypertension. In none of these five was the heart much increased in size. The duration of the auricular fibrillation was known in four instances to be one and one-half years, and six, four and two months, respectively. Three of these patients had paroxysms of auricular fibrillation before the condition became permanently established. One had attacks at irregular intervals over a period of three years, and one attack was observed to last five days.

In six, the sinus rhythm was restored. One of these had exophthalmic goiter and was operated on six weeks after the normal auricular mechanism was restored. This patient maintained a sinus rhythm for more than eight months. Recently the absolute irregularity appeared again. Quinidin was administered in 5 grain (0.3 gm.) doses after meals, and the heart became regular again on the second day. In another the heart had remained regular on 0.2 gm. doses once and twice a day. At one time the medication was discontinued for about two weeks. One patient passed from observation ten days after the sinus rhythm was restored. In the remaining three the duration of the sinus rhythm was only a few days, even though in two the quinidin was continued in 0.2 gm. doses twice a day. Three of those that were apparently refractory to quinidin had very large hearts. One of these was observed to have a sinus rhythm for a period of about twenty-four hours while on digitalis. It was this observation that encouraged the use of quinidin in this instance. One of the other patients that failed to

10. The only combination of parents absent from the data of von Dungern and Hirschfeld and myself is IV IV, the rarest of all possible combinations.

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1. Frey, W.: Berl. klin. Wchnschr. **55**: 417, 450, 1918; Deutsch. Arch. f. klin. Med. **136**: 70, 1921.
2. Von Bergmann, G.: München. med. Wchnschr. **66**: 705, 1919.
3. Boden and Neukirk: Deutsch. Arch. f. klin. Med. **136**: 181 (June) 1921.
4. White, P. D.; Marvin, H. M., and Burwell, C. S.: Action of Quinidin Sulphate in Heart Disease to Abolish Circus Movement of Auricular Flutter and Fibrillation, Boston M. & S. J. **185**: 647 (Dec. 1) 1921.

respond to quinidin had had an irregular heart only four months. The heart was not large, and compensation was apparently well established. The medication was continued until toxic symptoms appeared without much electrocardiographic change in the auricular mechanism.

Two patients seemed to be definitely improved by the quinidin treatment. One of these was a very nervous individual who worried a great deal about the irregular action of the heart. She described in detail the sensation of comfort that appeared with the onset of the sinus rhythm. The other four were apparently not very much impressed with the return of the regular action of the heart. In one of these the sinus rhythm was restored on three different occasions. In one the symptoms of cardiac failure developed. The quinidin was discontinued and the compensation was restored by digitalis. This was the only instance in which the quinidin was definitely harmful to the patient. In those in whom there were toxic manifestations, as a feeling of fulness in the head and ringing in the ears, the symptoms disappeared soon after the drug was stopped.

PAROXYSMAL AURICULAR FIBRILLATION

The three patients with paroxysmal auricular fibrillation had no other symptoms of cardiac disease. Two of these were more than 60 years old. In one the attacks had appeared at irregular intervals over a period of about eight years. The last few years they occurred on the average of three or four times a month, and lasted from one-half hour to twenty-four hours. In the other, the attack of irregular heart action was first noticed three years before. She had had as many as three attacks a week, and had been free at times for more than a month. The youngest of the three was 38 years old. His trouble began four months before, and prior to the beginning of the quinidin treatment he had had four attacks within two weeks. The last two had no further trouble since they began taking quinidin. One is now getting 0.2 gm. twice a day, and the other the same dose after the evening meal. The first was given 0.2 gm. three times a day over a period of several weeks without apparently any influence on the frequency of the attacks.

PAROXYSMAL TACHYCARDIA

The two patients with paroxysmal tachycardia were 10 and 30 years of age. The former was a blue baby and had a very definite congenital defect of the heart. She is, however, a well developed child and apparently has a good cardiac reserve. The attacks of rapid regular heart action were first noticed by the mother four years ago. They return at one and two month intervals. She has taken 1½ grains (0.1 gm.) of quinidin once a day for the last six weeks and has been free from attacks. In this instance there has hardly been sufficient time to determine the value of the treatment. In the second patient the paroxysmal tachycardia began when she was 11 years old. In later years the trouble has returned as often as two or three times a month, and each time incapacitates her for several days. She has had one recurrence of the condition in the last seven months, and this was after she had discontinued the quinidin for almost three weeks.

PREMATURE CONTRACTIONS

The twenty patients with premature contractions sought medical aid because of the irregular action of the heart. The duration of the trouble varied from a few months to three years. During this time the cardiac disturbance was in the majority a daily occurrence. During the examination of these patients it was particularly noticed that they were conscious of the appearance of every premature contraction. In only one instance was there definite evidence of organic heart disease, and this patient had no symptoms of cardiac weakness. In the sixteen in which we were able to determine the type of premature contraction, twelve were ventricular and four auricular.

After the initial examination, these patients were instructed to take 0.2 gm. of quinidin after each meal and return in one week. All except three were definitely sure that they were very much improved by the medicine. Ten reported that the heart had been regular for the first time in months. Seven had an occasional premature contraction but much less disturbance than they had had during any week since the onset of the trouble. Prior to the treatment with quinidin, three were disturbed during the night by the skipping of the heart. One had been awakened fairly regularly at 2 and 3 o'clock in the morning. In another, the loss of sleep had been so great that the general health was impaired. These patients are now able to sleep the night through. One girl had numerous ventricular premature contractions. They would frequently replace every second normal contraction for periods of two to three minutes. She was apparently conscious of the onset of the quinidin action. She stated that, about two hours after she took the medicine, the heart became regular and remained so for from five to six hours. In the further treatment the dose has been varied to suit the individual. In most instances the number of doses has been reduced to two a day, and in some to one a day. In each, the capsule has been given as far as possible a couple of hours before the anticipated time for the appearance of the greatest number of skipped beats. In some, the premature beats occurred fairly regularly after meals, in others after retiring for the night, while in others they might appear any time during the day. Sufficient time has not elapsed to determine the ultimate outcome in these patients. In one instance the number of doses had been reduced to two a day and later one a day, and finally was withdrawn for a period of ten days. At this time he carried a package weighing about 75 pounds (34 kg.) a mile (1.6 kilometers). At his destination he was very tired and nervous, and noticed a return of the irregular action of the heart. Prior to this upset the patient had in a large measure recovered from his former nervousness and had gained 11 pounds (5 kg.) in weight. The premature contractions were again eliminated by the quinidin. Another patient had gone along nicely for four weeks on two doses a day, and thought he was cured. He became greatly excited one day, and the heart skipped at frequent intervals for two periods of about an hour. He became nervous again and did not sleep for two nights. He has, however, since reported that he is getting along well. Further observations will be made to determine if possible the limitations of the treatment of premature contractions with quinidin. It is to be recalled that this type of irregularity is especially apt to be a transient condition, and any such study must be made in carefully selected cases.

COMMENT

The scope of the quinidin treatment of auricular fibrillation has not been determined. So far, however,

only a very small percentage of the patients have apparently been benefited. According to the available literature, 321 patients have been treated. In 48 per cent., the sinus rhythm was not restored. The condition of these could hardly have been improved, and some were actually harmed by the appearance of the symptoms and signs of cardiac failure. In the remaining 52 per cent. in which the sinus rhythm was restored, the normal auricular mechanism was transient in most instances. It would thus seem that even in this group the end results from the standpoint of the patient were, on the whole, unsatisfactory. The results will perhaps be better as more is known in regard to the limitation of the action of quinidin. It may be advisable to continue the medication in small doses after the sinus rhythm is restored. This method was advised by Frey,[1] and apparently has been employed successfully by Wolferth.[5] This would seem to be the logical procedure, since quinidin, according to Weichman,[6] is eliminated rapidly and auricular fibrillation is known to be a recurring condition. The success in maintaining a sinus rhythm, even though the quinidin is continued in small doses, will perhaps depend on the functional condition of the heart. Quinidin has a depressing action on the cardiac musculature, and thus any improvement in the general condition of the heart is apparently due to the elimination of the extra load imposed by the abnormal auricular action. This may be sufficient in some to permit the heart to regain a satisfactory working capacity. In others, however, cardiac failure will be easily produced which will in turn favor the return of the auricular fibrillation. It would thus seem that the results might be improved by the employment coincidently with the quinidin of some drug that would act favorably on the cardiac musculature. Frey advised against the use of digitalis. He concluded that it possibly promoted auricular fibrillation. Later investigators have in general apparently followed his recommendation. Schott[7] noted that quinidin produced heart block in the experimental animal, and suggested that digitalis should not be employed with the former because of the similar action of these two drugs on the conduction system. Hewlitt and Sweeney[8] observed the Stokes-Adams syndrome in one of their patients who was taking digitalis and quinidin. Frey has advised the use of caffein and possibly strychnin. It would seem that these drugs should be more generally employed until their value in this connection has been determined.

The results of the quinidin treatment of auricular fibrillation will undoubtedly be further improved by a more careful selection of the patients. So far, all types have been treated. It is apparently generally agreed by the various workers that those with long standing auricular fibrillation in whom the condition is associated with advanced cardiac pathologic changes are unfavorable subjects. Isolated instances of this type have been reported in which good results were obtained. Von Bergmann's case has frequently been cited in this connection. In a vast majority, however, the sinus rhythm has not been restored. While the prospects for the restoration and maintenance of a sinus rhythm are far better in those in whom the absolute irregularity is of recent origin and associated with a good cardiac musculature, the results even in this class cannot always be predicted. It will be recalled that in one of our patients in whom the duration of the auricular fibrillation was only three months, with compensation well established and very little demonstrable increase in the cardiac dulness, the quinidin was given until toxic symptoms appeared without much electrocardiographic change in the auricular mechanism. In another, the frequency of paroxysmal auricular fibrillation was not diminished by the administration of 0.2 gm. of quinidin three times a day. Lewis[9] has apparently satisfactorily explained why the normal auricular mechanism is not restored in some. He points out that the most striking action of quinidin is a prolongation of the refractory period. This shortens the gap between the crest and the wake of the circus movement of the auricles, and thereby finally terminates the abnormal auricular action. He further states that quinidin, in addition to prolonging the refractory period, delays the conduction period. The latter action opposes the former from the standpoint of terminating the auricular fibrillation. Thus, in those in whom the action on the conduction period predominates, it is impossible to restore the sinus rhythm.

The daily occurrence of premature contractions over a long period of time frequently becomes a serious matter to the patient. Some become highly nervous, lose their appetite and have difficulty in sleeping. This may progress to the point at which the general health becomes impaired. The treatment of this disorder has in many been very unsatisfactory. The majority of our patients had tried various remedies without relief. The regulation of habits, the correction of gastro-intestinal conditions and the reduction or elimination of tobacco have been successful in some instances. No drugs, however, have apparently influenced the prevalence of this irregularity. Quinidin promises to be a valuable remedy. In ten of our twenty patients, the irregularity was eliminated by quinidin. In seven, the frequency was diminished. Boden and Neukirk[3] reported favorable results in eighteen of the twenty-two patients treated. White, Marvin and Burwell[4] have recently mentioned one instance in which ventricular premature contractions disappeared following the administration of quinidin. The question may be raised that the premature beat is likely to be a transient condition, and thus the value of any therapeutic measure difficult to estimate. This possible objection was considered in selecting our cases. It will be recalled that these people had in most instances a daily recurrence of the irregularity over periods varying from three months to three years. There has not been sufficient time to determine the ultimate results in our patients. In some, the condition will probably return after the quinidin is discontinued. These will, however, profit by the treatment in that they will perhaps have been tided over a nervous period.

The mechanism of premature contraction and that of simple paroxysmal tachycardia are similar. Any medication that acts favorably on the former might thus be of value in the latter. Boden and Neukirk[3] reported encouraging results in four of six patients. In one of our two, the frequency of the attacks was definitely diminished. The treatment of this condi-

5. Wolferth, C. C.: Observations on the Treatment of Auricular Fibrillation by Quinidin Sulphate, Am. J. M. Sc. **162**: 812 (Dec.) 1921.
6. Weichman, quoted by Wolferth (Footnote 5).
7. Schott: Deutsch. Arch. f. klin. Med. **134**: 208, 1920.
8. Hewlitt, A. W., and Sweeney, J. P.: The Quinidin Treatment of Auricular Fibrillation, J. A. M. A. **77**: 1793 (Dec. 3) 1921.
9. Lewis, Drury, Iliescu and Weed: The Manner in Which Quinidin Acts in Auricular Fibrillation, Brit. M. J. **2**: 514 (Oct. 1) 1921.

tion by other methods has been so unsatisfactory that quinidin deserves further investigation.

SUMMARY

1. Twelve patients with permanently established auricular fibrillation were treated with quinidin sulphate. In six, the sinus rhythm was restored. In three, the duration of the normal auricular mechanism was transient. One passed from observation ten days after the cardiac rhythm became normal. The remaining two have maintained a sinus rhythm two and one-half and eight months, respectively. The former has taken 0.2 gm. doses of quinidin once and twice a day most of the time. The latter had an exophthalmic goiter, and was operated on about six weeks after the sinus rhythm was restored. The goiter no doubt aggravated the cardiac condition, and the removal of this exciting factor was perhaps partially responsible for the success of the quinidin.

2. Three patients with paroxysmal auricular fibrillation were treated with quinidin. Two of these have had no further attacks. The remaining one took 0.2 gm. of quinidin after meals over a period of several weeks without apparently influencing the frequency of the condition.

3. The treatment was most successful in those in whom the auricular fibrillation was of short duration and associated with a good cardiac musculature. In this group, however, the results could not always be predicted.

4. The results of the quinidin treatment of auricular fibrillation from the standpoint of improving the general cardiac condition of the patient have, on the whole, been unsatisfactory. The results will undoubtedly be more satisfactory in carefully selected patients. They will perhaps be better as more is known in regard to the limitations of the action of quinidin. It would also seem that the results might further be improved by the employment of drugs that have a favorable action on the cardiac musculature, provided the former does not counteract the action of the latter in maintaining a sinus rhythm.

5. Twenty patients with premature contractions were treated with quinidin. Seventeen reported that they were markedly improved by the treatment. In ten, the irregularity was apparently eliminated. In seven, the frequency of the condition was diminished.

6. Two patients with simple paroxysmal tachycardia were treated with quinidin. One of these was definitely improved.

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Child Welfare Campaign.—The Children's Bureau, Washington, D. C., recently inaugurated a campaign in Porto Rico for weighing and measuring of babies and teaching proper nutrition, and establishing prenatal and baby clinics, Little Mothers' Leagues and other child welfare activities, in connection with a committee, consisting of the managing director and secretary of the National Committee for the Prevention of Blindness, who studied conditions and made recommendations looking to the prevention of blindness and deterioration of sight, and to the education of blind children and those of seriously defective sight. Dr. Fernós Isern, president of the Porto Rico Association for the Blind, formed committees all over the island to take charge of local arrangements, with the assistance of Dr. W. F. Lippitt, insular commissioner of health. Conferences were held with the leading citizens of each community regarding the problem of sight saving; meetings were held in the moving picture houses, with addresses in both Spanish and English, and films were shown presenting the various activities of the work.

ACUTE CONDITIONS IN THE ABDOMEN*

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By the term "acute conditions in the abdomen," often incorrectly referred to as "acute abdomen," is meant the acute expression, or manifestation, of a chronic pathologic condition within the abdomen which requires the immediate consideration of the physician and the intervention of the surgeon, and usually prompt operation. It results from a variety of diseased conditions with which surgeons are, doubtless, familiar.

The most common causes are acute infections of the appendix and gallbladder; perforation of duodenal, gastric, peptic and typhoid ulcers; intestinal obstruction before and after operation, and acute dilatation of the stomach following operation.

In any view of the subject, diagnosis is essential and of the first importance. Superficial investigation of histories and records, indifferent examination of patients, and the exclusive pursuit of the routine procedures of the operating room do not, of themselves, stimulate the scientific spirit, diagnostic inquiry and individual initiative. The art of diagnosis is not the product of the laboratory, but of the sickroom.

Anamnesis seems to have become a lost art as the instruments for a more scientific and accurate solution of the problems which confront and embarrass us have been developed and come to occupy such a deservedly conspicuous place in the study and evolution of disease—not that I underestimate the value of any equipment that is so necessary to the perfection of our work; but I also realize the dangers in any specialism which is both narrow and exclusive and hinders the free exercise of the faculty of observation in the clinician.

These acute conditions are common, and in many of the cases with which the surgeon has to deal the history is not satisfactory. Quick decision and intervention are necessary to the patient's welfare. The physician or surgeon who is in the habit of investigating histories and analyzing the signs and symptoms which differentiate disease, and who makes a careful examination of the present condition of the patient, will more certainly adjust his conclusion to the facts and his procedure to the best interest of the patient, than the one who rushes to the laboratory and roentgen-ray establishments and expects these accomplished students in scientific specialism not only to make the diagnosis but also to direct the treatment. I agree with those who consider the laboratory of little or no value in the diagnosis and treatment of these acute abdominal conditions.

The differential diagnosis is of such importance as to demand immediate consideration of all obtainable facts in the clinical history.

Death is due to septic peritonitis, the prevention and treatment of which depend on prompt operation.

We appreciate that bile secretions and those of the stomach and duodenum contain no pathogenic bacteria in health, but the pathologic condition resulting in gangrene and perforation leads rapidly to local and diffuse septic peritonitis.

There are two conditions in abdominal surgery which admit of no operative delay even in the presence of shock; these are hemorrhage and perforation. The condition and environment of each patient will, as a

* Read before the Western Surgical Association, St. Louis, Dec. 9, 1921.

rule, determine the operative procedure and the form and extent of anesthesia. The symptoms of perforation are pain, rapid pulse, some degree of shock, muscle rigidity, abdominal distention and vomiting. With marked and persistent distention, muscular rigidity disappears, and consequently ceases to be of value in the diagnosis. It is just such cases, when seen for the first time, that give added interest and value to the clinical history.

Surgeons may differ as to the best time for operation in certain acute and delayed cases. Impressed with the idea that starvation and the salt water rectal drip will hold in abeyance the progress of the disease, they counsel delay, in the hope that a more auspicious hour will arrive when operation will promise a better result. That hour frequently does not arrive. This procedure was, if it is not still, a popular fad with some physicians and surgeons, which to my mind admits of no satisfactory defense. In my opinion, the delay increases the mortality. In general septic peritonitis, death is inevitable without operation; to delay it insures additional complications, and makes operation more difficult and recovery more doubtful.

The method of choice is to operate at the earliest opportunity in one or more dependent positions, if necessary irrigate with warm salt solution or any mild antiseptic, and drain. Adhesions and encapsulation prevent irrigation and drainage of the peritoneal cavity, usually for more than thirty-six hours. Many reported recoveries in diffuse peritonitis are in reality only localized, or are encapsulated abscesses.

Only in exceptional cases should there be any doubt as to the importance and advisability of excising the focus of infection. In septic peritonitis, leukocytosis cannot usually be depended on to combat the evil successfully. Drainage is necessary, and if the primary source of infection is not removed, convalescence is delayed, drainage prolonged, and recovery rendered more doubtful.

Some surgeons still use the gauze pack in severe localized infections; under such conditions, porous material that will not adhere to the tissues should underlie the gauze. This form of drainage is justifiable only in bad cases due to the too long delay of an urgent operation. The gauze should be removed in twenty-four or thirty-six hours, and usually should not be reapplied. After saturation, gauze does not drain, and it then becomes a source of infection. In mild cases of localized infection, with seropus, a wick drain for from twenty-four to thirty-six hours is adequate and often renders reopening of the wound unnecessary; but in severer infections the rubber tube or glass drain answers the purpose better. It should be insisted that the tube should be changed often and discarded as soon as possible, for it becomes a source of infection when retained too long.

Gangrenous gallbladders and usually those of long standing infection should be removed. If the walls are elastic and not seriously or much involved, drainage will be efficient. If there are stones in the ducts it may be more desirable to do a cholecystotomy and drain. Many small stones are not infrequently overlooked and, should cystectomy be performed, the changed topography and adhesions increase the difficulties of a secondary operation. Besides, drainage has an immediately good effect on the cholemia and condition of the liver, and improves the pancreatic condition, this organ being so commonly diseased through primary infection of gallbladder and ducts. Observations recently made show that when the gallbladder has been removed the ducts enlarge to such an extent as to make a reservoir undoubtedly for the storage of bile. This would show that bile, like the chyle and gastric juices, is chiefly discharged only during digestion, and its storage is a necessary and wise physiologic provision.

Unless the pathologic condition of the bladder is such as to require, without question, its removal, we should use more circumspection and discrimination in the matter, even if this is not in accord wtih the fashion of the day.

Recently, Muller and Ravidin [1] reported fifteen cases of perforation of gastric and duodenal ulcers, with favorable results from prompt operation, and noted as interesting that four of the cases elicited no history of ulceration previous to the perforation, especially in the absence of pain. These are designated atypical cases, there being a sensible diminution instead of increase of the hydrochloric acid. My credulity is not easily reconciled to the statement that long standing ulcers progress to perforation without any previous evidence of disease. It reminds one of the many cases of acute appendicitis in which the patient professes no knowledge of any previous illness, and yet careful investigation reveals evidence which was unappreciated by the patient, but which was conclusive to the physician.

The subject should not be dismissed without brief consideration of intestinal obstruction—dynamic and adynamic—the former due chiefly to adhesions, volvulus and the pressure of tumors, usually carcinomas of the large bowel. Ordinary mechanical obstruction is attended with pain and vigorous persistalsis above the seat of obstruction, increased pulse rate but no elevation of temperature, and with vomiting which becomes fecal. The history of these cases is absolutely necessary to an intelligent opinion. Immediate operation gives relief. If operation is delayed, complications will soon ensue and enterostomy or resection and anastomosis may be necessary as a final life saving measure.

In septic ileus there is intestinal paralysis; increased, though at times subnormal temperature; fast pulse; vomiting, not fecal, and muscular rigidity. Persistent distention in this condition should be regarded as an unfavorable omen. Ileus, before operation, suggests delay that may or may not have been avoidable. In these aggravated cases it would, in my opinion, be a wise precautionary measure to include enterostomy in the primary operation. It is perhaps unnecessary to state that in some cases the condition seems so hopeless that it would be useless to undertake a serious operation; yet one occasionally records a recovery from a desperate situation by operation. There are also conditions, especially of the heart, lungs and kidneys, in which operation is contraindicated.

I have refrained from any attempted exposition of technic or operative details, feeling assured that every good surgeon's duty and inclination is to meet the indications in individual cases in accordance with his own judgment and the recognized principles of modern surgery.

When in grave doubt as to the condition and the procedure to adopt in a given case, we feel compelled to explore the abdomen, which may be of great service in some cases and of no value in others. With increas-

1. Muller and Ravidin: Ann. Surg., September, 1921.

ing knowledge and a greater degree of perfection in diagnostic acumen, the exploratory operation will not frequently be deemed a necessity.

325 Mack Building.

URTICARIA FROM HABITUAL USE OF PHENOLPHTHALEIN

REPORT OF A CASE *

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The popularity and general employment of phenolphthalein as a laxative, both frankly prescribed as such by physicians and incorporated in numerous proprietary remedies, determines it to be a chemical which has at one time or another been used in a great number of cases. It would seem remarkable, therefore, if there were not occasionally individuals who, through some idiosyncrasy, react strongly toward it and develop dermatoses. As constipation is frequently a chronic derangement, and as phenolphthalein possesses only a transient laxative effect, it may be assumed that in many of these cases the drug has been taken habitually over long periods—in the vast majority of instances with satisfactory results. From time to time, we have been apprised, in conversing with other dermatologists, of eczematoid eruptions ascribed to the ingestion of phenolphthalein, but have not observed any outbreak known to be from such a cause. A routine study of such cases from this standpoint has not been made, however.

The literature on the subject is scanty and does not bear out the oral communications referred to. An eruption nearly uniform in type occurred in the cases of Abramowitz,[1] Fox,[2] Wise,[3] Scheer[4] and Ayres.[5] The lesions were of a sort most closely resembling erythema perstans—wheal-like, but existing unchanged for weeks or months and associated with annoying itching. Scheer's case paralleled ours in one particular, as it had its inception following the administration of a biologic product—in that instance diphtheria antitoxin. Rosen's[6] case exhibited a vesiculopapular eruption involving the entire front of the chest and abdomen. Ormsby[7] states that phenolphthalein occasionally produces erythematous plaques followed by pigmentation. Silberstein[8] took a single dose of a phenolphthalein purgative, and plaques developed on his tongue suggesting cancer. A year later another dose caused a painful stomatitis and herpes on the genitals. A woman consulted him for lassitude, anorexia and conjunctival ecchymosis, the result of taking seven tablets of a phenolphthalein preparation in three days. Rosenstein[9] stated that a woman patient of his had been taking a proprietary pill as an antifat remedy for several weeks. She lost weight at the expense of her health, could not get rid of a diarrhea, and was finally discovered to have a severe hemorrhagic nephritis. The pills in question contained phenolphthalein, although this ingredient was not mentioned on the label. No reference to a skin eruption was made. After a week's illness she completely recovered.

The last two references are somewhat unconvincing. The implication of phenolphthalein is not clearly proved.

Macleod,[10] Stelwagon and Gaskill[11] and other recent authors do not mention the drug as a cause of dermatitis medicamentosa.

It seems unnecessary to review the formula and history of the drug, its pharmacology and therapeutic effect. One may be referred to Ayres' article in which those subjects, together with pertinent cases, are well set forth. His own case was carefully studied. In that writer's list of numerous proprietaries containing phenolphthalein, some forty-four in all, we do not find the preparation known as carbolax with cocoa, used by our patient. The formula was not known by the American Medical Association, and we did not have the preparation analyzed. The label on the bottle bore the inscription "Phenolphthalein 1 gr. Cocoa q. s."

In the case which we report, constantly recurring attacks of hives were noted. These occurred after the ingestion of phenolphthalein; but the condition, until the history was more carefully reviewed, was thought to be a chronic urticaria from some undetermined food factor. This form of lesion has been reported as the result of administration of potassium iodid, chloral, quinin, santonin, copaiba, sodium salicylate, turpentine, opium, alcohol, belladonna, other coal-tar derivatives, and a number of less important drugs to suspectible individuals; but, so far as can be ascertained, phenolphthalein has never been included among their number. Recognition of the fact that it can cause such an outbreak may, with pointed questioning, clear up the etiology of other cases of presumably chronic urticaria of unknown origin.

REPORT OF CASE

Miss H. C. L., a private patient, a highly intelligent white woman of 40, first seen by us, Oct. 29, 1921, had been chronically constipated since childhood. No outbreak had ever been present on her skin with the exception of six or eight attacks of urticaria which were invariably traceable to one source—cantaloup. The last occurrence of hives from this factor was a number of years ago, as she learned to avoid the cause. Her previous medical history was unenlightening. After trying many different laxatives over a period of years without finding one that was entirely satisfactory to her, in 1918 she began the employment of a proprietary tablet with excellent effect in every way. For two years she took one of these tablets virtually every night. About this time the patient received three typhoid inoculations at weekly intervals without any reaction, cutaneous or otherwise, noted from them. In 1920 she again received typhoid prophylactic injections. Following the third inoculation, wheals broke out. The arms and neck were favorite sites, but no region was exempt. These persisted for one year, appearing anew almost every day. They were nearly always large, frequently double-palm sized or larger. Individual lesions never lasted over twenty-four hours and disappeared without leaving a trace. They were rounded in outline, frequently irregular in shape, and invariably with a rose-colored or reddish margin to the elevated whitish plaque. In other words, they were typical wheals, often of the giant variety. Itching was very disturb-

* From the Department of Dermatology, Jefferson Medical College.

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2. Fox, Howard: J. Cutan. Dis. **36**: 252 (April) 1918. (Same case as the preceding.)
3. Wise, Fred: Phenolphthalein Eruption, Arch. Dermat. & Syph. **3**: 200 (Feb.) 1921.
4. Scheer: Dermatitis Medicamentosa, Arch. Dermat. & Syph. **3**: 704 (May) 1921.
5. Ayres, Samuel, Jr.: Phenolphthalein Dermatitis, J. A. M. A. **77**: 1722 (Nov. 26) 1921.
6. Rosen, L.: Dermatitis Medicamentosa, Arch. Dermat. & Syph. **1**: 355 (March) 1920.
7. Ormsby, Oliver: Diseases of the Skin, Philadelphia, Lea & Febiger, 1921.
8. Silberstein, L.: By-Effects of Phenolphthalein, Therap. Monatsh. **34**: 306 (June 1) 1920.
9. Rosenstein, P.: The Abuse of Phenolphthalein, München. med Wochenschr. **67**: 263 (Feb. 27) 1920.
10. Macleod, J. M. H.: Diseases of the Skin, New York, P. B. Hoeber, 1921.
11. Stelwagon, H. W., and Gaskill, H. K.: Diseases of the Skin, Philadelphia, W. B. Saunders Company, 1921.

ing. The eruption did not come on immediately after taking the drug, as in Abramowitz' case. The tablet was taken at night, and the wheals were present the next morning. No medicine but the tablets referred to was regularly taken during this time, but the laxative was continued throughout this third year. A general physical examination revealed nothing abnormal. The urine was negative. Food tests by the intradermal method, injections into the skin of the proteins of seventeen foods commonly used by the patient, were of little diagnostic value. Beef + was noted, wheat + and lamb and cheese ±. An eruption corresponding to the foregoing description was noted on the neck, chest and arms. There was no scale on the surface, and no traces of former outbreaks were seen.

On our advice the laxative tablets were discontinued, and the hives gradually disappeared, the last being noted about ten days after cessation of the drug. Two months afterward, at our request, the tablets were recommenced with reappearance of the wheals. Following the second withdrawal of the drug, the eruption disappeared within twenty-four hours. As we knew nothing about the actual composition of the tablets other than the formula on the label, after a lapse of several weeks the patient was given capsules, each containing 1 grain (0.065 gm.) of phenolphthalein. One of these taken at bedtime had the same effect on the bowels as one of the tablets evoked, and produced in addition a number of small wheals on the neck. Two capsules the following evening brought out the next morning an urticarial patch which involved one forearm from the elbow to the wrist. This was gone in twenty-four hours. No more phenolphthalein was taken, and in the ensuing interval no recurrence of the skin condition has occurred.

SUMMARY

This case is an addition to the few instances in which phenolphthalein has been noted to produce a skin eruption.

Differing from previously reported cases, our patient had an outbreak clinically indistinguishable from the common type of urticaria.

2039 Chestnut Street—927 Spruce Street.

DENTAL INFECTION SECONDARY TO ACUTE MAXILLARY SINUSITIS

REPORT OF THREE CASES

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The etiology of maxillary sinusitis includes the extension of infection from the teeth as one of the principal sources. The method of infection may be through direct continuity from a manifest or a hidden dental caries, a dead tooth, a periostitis, an osteitis of the alveolar process, a rupture of an infected dentigerous cyst, or through the circulation. Hajek, who is probably the most conservative in this particular, reports the dental origin at about 8 per cent. Lermoyer and Luc place it at about 50 per cent. Tilley, going to the opposite extreme, estimates it at about 100 per cent. However, the general opinion is that the incidence of the dental etiology is from 20 to 25 per cent. Though all of these percentages are subject to much dispute, they are sufficiently strong to convince one that dental infection is an established and important cause of antrum disease. However guilty the teeth may be, there are occasions when they are not only innocent, but actually the victims of a primary infection of the maxillary sinus.

When dental caries or a periostitis is present, or an osteitis of the alveolar process, or a dentigerous cyst, the transference of the infection through direct continuity of the surface can be readily understood. However, in order fully to understand the conveyance of an infection through the circulation it is necessary to refer to the blood supply of the structures involved. Strubell found, on injecting the posterior alveolar arteries, three distinct groups of vessels; the first in the mucous membrane of the antrum (the periosteal layer), the second in the spongy bone of the maxilla, and the third in the covering of the alveolus and the roots of the teeth. These vascular groups, though showing individual characteristics, had so many connections and were so intimately anastomosed with one another that the three groups could be considered as really one system. It was thus shown that the blood supply of the antrum, the maxilla and the teeth was the same. Knowing the intimate communication of these three vascular groups, it is now easy to understand how the infection from the antrum can travel by way of the circulation to the teeth.

REPORT OF CASES

This condition, wherein the dental infection is secondary to a maxillary sinusitis, is illustrated by the cases here reported:

CASE 1.—Agnes B., aged 40, complained of a severe neuralgic pain over the superior maxillary region and orbit on the left side. The pain was very acute, shooting in character and intermittent in type, and occurred every few minutes. The patient had not been able to sleep for three nights, and had been very restless during the daytime, continually applying hot poultices. This resulted in a marked swelling of the cheek and eyelids, but no relief of the pain.

Her dentist found nothing the matter with the teeth and referred her for a sinus examination. Rhinoscopy disclosed a hyperemia of the naris on the affected side, a hypertrophied mucous membrane, no septum deviation, no hypertrophied turbinates and no secretion. The patient was placed on conservative treatment consisting of hot nasal irrigations, hot tincture of benzoin compound inhalations, intestinal catharsis and an antipyretic potion, and referred for roentgenography. The roentgenograms revealed a definite shadow over the antrum, but no diseased condition of the teeth on the affected side.

The anterior end of the inferior turbinate and adjacent structures were anesthetized with 10 per cent. cocain, and a needle puncture was made. Injection of physiologic sodium chlorid solution resulted in the evacuation of pus, which was mixed with the solution and emitted a fetid odor. About a quart of the solution was used until the return flow was clear. The patient felt much relieved and was told to return the following day, which, however, she did not do. She returned a month later complaining of similar symptoms, only milder in character. Rhinoscopy on this occasion revealed a condition similar to the one previously found. As a routine procedure the teeth were examined again, and this time tenderness was elicited over the second bicuspid. A roentgenogram revealed an abscess at the root, which had positively not been there on the previous examination. The tooth was extracted, and the patient made an uneventful recovery.

CASE 2.—James H., aged 28, was referred by the family physician with a diagnosis of a probable pansinusitis with an acute maxillary antrum exacerbation. The patient complained of headache intensified by stooping, coughing or any jarring. The pain was general over the whole forehead, and was particularly severe over the left eye and left cheek bone. He gave a history of headache, nasal obstruction, and susceptibility to colds extending over a period of three years. This acute attack was of four days' duration.

Examination of the teeth detected no tenderness or manifest caries. Rhinoscopy revealed a septum moderately deviated to the left, a hypertrophied mucous membrane, and a polypoid

middle turbinate on the left side. There was a thick secretion between the septum and the middle turbinate, and also between the turbinate and the lateral nasal wall. The diagnosis of pansinusitis of the left side was sustained, but because of the acuteness of the present condition, radical measures were postponed. The maxillary sinus was punctured and irrigated, and pus was evacuated. Relief from the excruciating pain was almost instantaneous. The patient was then referred for roentgenography. The roentgen-ray findings were negative as far as the teeth were concerned, but showed shadows over the left frontal, the left ethmoid and the left maxillary sinus. The patient, who was a traveling salesman, had to leave and did not return for about three months, at which time he presented another exacerbation of the antrum infection. In addition, at this time the examination of his teeth disclosed an apical abscess of the first molar which had not been there previously. The antrum was punctured and irrigated, and at a later time the polypoid middle turbinate was removed, the ethmoid cells were exenterated, and the sphenoid sinus given a wide opening. The sinusitis was cleared up and the patient was referred to his dentist for the dental infection.

Case 3.—Henry G., aged 32, came to the office complaining of a throbbing pain over the right side of the face. In addition he had a temperature of 101 F. The pain radiated over the cheek and the teeth to his ears and to his neck. He had first noticed this about three days before. Believing it to be a toothache, he went to his dentist, who removed a bridge from that side of the mouth, but found no focus of infection in the teeth and pronounced the teeth in good, healthy condition.

On further questioning it was ascertained that the patient was subject to frequent "colds in the head," and that at one time the trouble had been diagnosed as antral; but the symptoms had been so mild that he did not care to have any operation performed.

Rhinoscopy disclosed a hypertrophic rhinitis, but no secretion. The inferior turbinate and the adjacent structures were anesthetized. Pus was evacuated, and the washing with the physiologic sodium chlorid solution was continued until the return flow was clear. The patient was under treatment for two weeks. The acute symptoms subsided, but at each washing pus still showed. The secretion was thick, tenacious and foul and the needle opening was insufficient, it being blocked by the hypertrophied inferior turbinate. Removal of the anterior tip of the turbinate and enlargement of the opening were suggested, but as the patient was relieved of his subjective symptoms, he refused any further intervention.

He did not appear again until six months later, when he came, in great distress, the pain being even more severe than during the previous attack. The rhinoscopic picture was unchanged. As a routine procedure the teeth were examined, and this time tenderness was elicited over the second bicuspid and the first molar. Irrigation of the antrum revealed pus. As soon as the acute condition subsided, the anterior end of the enlarged turbinate was pushed away from the nasal wall and fractured. A better field being obtained, the antrum opening was well enlarged and free drainage was established. At the same time the patient was referred to his dentist, who this time reported abscesses of both the second bicuspid and the first molar teeth. The maxillary sinusitis was cleared up intranasally. At my final examination of him, he reported as still under the care of his dentist for the dental infection.

COMMENT

When these patients first appeared, all had sound teeth. This was satisfactorily demonstrated by the combined findings of three different men: the dentist, the roentgenologist and the rhinologist. Each of the patients had a definitely diagnosed acute maxillary sinusitis, which was conclusively proved by pus being obtained from every one of the antrums. In addition, one patient had a pansinusitis of the affected side. Each neglected the proper treatment of the antrum and developed another acute attack, at which time a recently developed dental infection was discovered in addition to the antrum infection already present. In view of the close anatomic relationship of the antrum of Highmore and the teeth involved in each case, it is reasonable and logical to conclude that the dental infection was due to the pus finding its way from the antrum to the teeth, and makes one believe that, if the proper attention had been given to the sinusitis at the right time, these teeth would in all probability have been saved.

231 East Eleventh Street.

RELATION OF CONSTIPATION TO INTESTINAL INTOXICATION

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Constipation is a symptom indicating a disturbance of the function of the colon. Around this common, chronic disorder have been built more than one elaborate speculation, the foundation stone of all being a toxemia resulting from the retention of decomposing material. The large bowel has, in truth, been the theorist's playground, and the ideas of intestinal intoxication, or toxemia, or autointoxication have come to be linked with every sluggish colon.

That some patients are morbidly depressed by the suggested possibility and are loath to forsake their gloomy fancies, even when order is restored, is recognized by every practicing physician.

Clinical observations have led many physicians to doubt that in the increasingly common case of ordinary constipation with a delay of forty-eight, sixty, seventy-two, a hundred hours or perhaps longer, it is attended by the absorption of toxins. In other words, that the symptoms of so-called autointoxication complained of and seen in a large number of these cases are caused by a polluted blood is questioned.

I believe that investigation shows that (1) the symptoms presented by those seeking relief from constipation cannot be taken as unquestioned evidence of the absorption of toxins; (2) in cases of ordinary constipation, toxic substances are not necessarily absorbed into the blood, and (3) in these cases, toxic substances may not be present in the fecal mass in sufficient amounts to produce symptoms if absorbed.

ORIGIN OF SYMPTOMS IN CONSTIPATION

The typical symptoms of so-called autointoxication may be primarily explained on a mechanical basis, that is, distention and irritation of the lower bowel by fecal masses. The nervous system is the distributing agency, all tissues sharing in the disquietful state. As one result, we note a tendency to endocrine unbalance, this in itself being of sufficient import to be causative of certain symptoms and ultimate effects. It is my contention that this explains the pronounced symptomatology of the nervous system, involving the mental, the sensory, the motor and the sympathetic systems, and which Satterlee and Eldridge[1] assign to the selective affinity of toxins.

EXPERIMENTAL OBSERVATIONS

Five normal men were selected, four medical students and one physician. Two of the five were in the habit of having two bowel movements each twenty-four hours, and each of the remaining three, one. Three of the men were specifically interested in the

1. Satterlee, G. R., and Eldridge, W. W.: Symptomatology of the Nervous System in Chronic Intestinal Toxemia, J. A. M. A. 69: 1414 (Oct. 27) 1917.

problem, having worked on it more or less intensively in the preparation of a thesis. The other two were sufficiently interested to volunteer their services. The preconceived notion of all of the men was that the toxemia theory was correct; thus, if they allowed any prejudice to influence their actions and their reports of subjective symptoms, it was not at all favorable to the actual findings.

For one week, control observations were made, covering (1) reaction time for sight, touch and hearing; (2) basal metabolism; (3) neuromuscular fatigue; (4) blood chemistry—urea, uric acid, nonprotein nitrogen, sugar; (5) blood viscosity; (6) indicanuria; (7) roentgen-ray findings of the gastro-intestinal tract; (8) blood pressure and pulse, and (9) subjective symptoms—coated tongue, foul breath, mental acuity, appetite, digestion, pain or discomfort, emotions, sleep, restful or otherwise, and nervous manifestations.

The normal consists of an average of from three to seven observations made on each of the nine points listed. The laboratory work was done by technicians, expert in their field.

This was followed by a period of voluntary constipation lasting nearly four days—ninety hours, no drugs being employed. Aside from the use of boiled milk to serve as a constipating agent, the dietary remained the same as during the control period, namely, a liberal lacto-ovovegetarian regimen. The very distressing call to stool abated after the first twenty-four hours, the normal alarm being quieted, as expected, by refusal to respond.

In each case the typical symptoms of "autointoxication" developed. All but one presented a coated tongue within sixty hours. The breath was markedly foul in one case, and corresponded to the degree of tongue coating in the other three. One man developed canker sores. The appetite was impaired in every case, and all but one complained of some gas. No gastric distress was noted in four; one complained of periodic attacks of nausea after forty-eight hours. The development of mental sluggishness and an increasing deficiency in the power of attention was a marked symptom in each subject. They were uniformly depressed, restless and irritable. In all but one, the night's rest was declared to be unrefreshing. A sense of heaviness in the pelvis and the dull "toxic" headache was noted in each case. The headache was a pronounced symptom within forty-eight hours, and continued throughout the period. Every man expressed himself as feeling generally "rotten." In every way their symptoms compared favorably with the general malaise complained of by the constipated.

The sluggishness of the nervous system was also indicated by the increase in reaction time. The normal average for sight, touch, and hearing being 0.184, 0.146 and 0.149 seconds, respectively. The average of four observations taken during the constipation period was 0.221, 0.165 and 0.162, respectively. This shows an increase of 0.037 for sight, 0.019 for touch, and 0.013 for hearing.

A study of the basal metabolism on four subjects indicated a pronounced increase in each case, one showing a jump from a normal average of 2.09 plus to 18.1 plus per cent. The others showed an average increase of about 6 plus per cent. This is in keeping with our blood sugar findings.

The average blood sugar for the control was 97 mg. per hundred cubic centimeters. Examination of blood taken on the morning of the fourth day revealed an average content of 124 mg. per hundred cubic centimeters, indicating an average increase of 27 mg., or 28 per cent. of the normal. From Cannon's work we know that this glycemia points to suprarenal stimulation, and that the resulting increase in endocrine activity can be justifiably expected to account for the alteration in metabolic rate.[2] The blood urea, nonprotein nitrogen and uric acid showed no alterations.

Ergographic determinations indicated the more rapid onset of fatigue, an average of 64,000 gram-centimeters less work being done in the seventy second interval than under the conditions of the control.

The viscosity of the blood remained the same throughout the entire period of observation.

The test for indicanuria was limited to four of the men, and brought indifferent results. The urine of three of the subjects contained a slight trace of indican before the period of constipation, and two of these revealed no more at the end of the period than before. The urine of the third man gave evidence of a slight increase. The urine of the fourth man, clear on the control, contained a trace at the close of the period. According to Hewlett, the amount of indican in the urine may be normal, diminished or increased in chronic constipation; hence, the findings do not mean much.[3] Large numbers of cases reported as chronic intestinal toxemia show no indicanuria.[1]

Barium was mixed with the breakfast every other morning for a week before the constipation period, and careful estimate was made of the motility of the tract. All of the men were found to be in excellent condition mechanically. Toward the close of the constipation period they were again observed with the specific object of determining the possibility of an ileac stasis. Reasoning from the gradient theory of Alvarez, we were prepared to find not only an ileac but possibly a duodenal stasis. In this we were happily disappointed. Every ileum was clear, well inside the twelve hour limit.[4] An examination of the records of the Loma Linda Sanitarium and Hospital reveals the fact that, save in those cases in which there was a pathologic condition of the intestinal tract, chronically constipated persons give no evidence of ileac stasis. If they did, this story might be different; for it is pretty generally agreed that stasis in the small bowel probably does give rise to a toxemia.

At the close of the ninety hour period of constipation, the men were instructed to take a cleansing enema and to report to the laboratory for further tests. Four of the men did so; the fifth, apparently adverse to the injection, succeeded in arranging a bowel movement in some other way. All appeared at the laboratory within sixty minutes of the time that operations for the relief of their condition were begun. Quizzed individually, they were unanimous in their opinion that they felt decidedly different, and their general attitude stamped their statement as the truth. In all cases the sense of oppression and marked mental depression was gone. The headache was gone in four subjects, one man complaining of the evidence of a leave-over, which, however, was entirely gone within the period of another two hours. Every man expressed himself as feeling a degree of mental alertness and

2. Cannon, W. B.: Bodily Changes in Pain, Fear, Hunger and Rage, New York, D. Appleton & Co., 1920.
3. Hewlett: Pathological Physiology of Internal Diseases, 1917, p. 199.
4. Alvarez, W. C.: The Motor Functions of the Intestine from a New Point of View, J. A. M. A. 65:388 (July 31) 1915.

physical fitness foreign to him for several days past.

The proof of the trustworthiness of their statements lay in the laboratory tests that were made. The reaction time for sight, touch and hearing was cut from one to four-hundreths second—in other words, back to the control readings. Three of the five were tested for neuromuscular fatigue, and in each case did more work by several thousand gram-centimeters than was done one hour before.

The blood sugar determination which, one hour before, gave an average for the men of 124 mg. per hundred cubic centimeters now gave an average of 92 mg. per hundred cubic centimeters—back to the normal figure.

The marked termination of the classical symptoms of "autointoxication," with laboratory findings indicating a cessation of the activities of causative agencies within a period of time prohibitive of the complete elimination of toxins if present as causative agents, can lead us to but one conclusion, namely: that these symptoms cannot be taken as evidence of the absorption of poisons.

I feel that my position in this matter is reinforced by the subsequent finding, by roentgen-ray examination, that the man who failed to take an enema had a large mass of fecal material still present, the entire sigmoid and large bowel back to the midportion of the transverse colon being filled. He said that he had passed a great quantity of material and supposed that the bowel was clear. The colon of each of the other men was empty. The one man still had enough material remaining to supply the system with toxins in plenty, if that were the modus operandi in these cases. The fact is that he eliminated enough to relieve the irritation and hence the abatement of symptoms.

That the same syndrome may be produced by the introduction of an inert substance into the rectum has been observed by Alvarez in his work with patients.[5] To substantiate the point experimentally, we packed the rectum of four of the men with cotton pledgets soaked in petroleum and dusted with barium. This was done two days after the other work was completed. Roentgen-ray observation indicated that the rectum was comfortably filled in each case. The packing was retained for three hours. The men were then quizzed, and each testified to the return of the typical symptoms previously recited. Again laboratory findings substantiated the statements. Reaction time was again prolonged, and neuromuscular fatigue again earlier in its onset. Blood sugar, although within the normal limits, showed an average drop of 6 mg. per hundred cubic centimeters after evacuation, a control having been taken just before the rectum was packed.

The effect of rectal plugging on blood pressure was determined on a dog prepared for a blood pressure tracing. A gradual rise was noted from 122 to 138 mm. of mercury in four minutes. This high level was maintained without alteration till the close of the observation, some fifteen minutes later.

IN CASES OF ORDINARY CONSTIPATION, TOXIC SUBSTANCES ARE NOT ABSORBED INTO THE BLOOD

In studying this phase of the problem, dogs were used. A sample of feces from a constipated patient was obtained, several types of bacteria isolated, and cultures grown in suitable broth. Two healthy dogs were selected, Dogs A and B. Dog A was starved for half a day and given an ounce of castor oil. The next morning, Dog A was anesthetized, the abdomen opened, and the large bowel clamped at its proximal and distal ends. The portal and femoral veins were isolated. Dog B was prepared for blood pressure tracings, and the femoral vein exposed. Ten cubic centimeters of blood from the femoral vein of Dog A was drawn, citrated, and injected into Dog B. The injection was repeated, using portal blood from Dog A. The curve obtained was precisely the same in the two cases—a slight rise amounting to 4 mm. of mercury. These curves were taken as a control. Sixty cubic centimeters of the prepared broth was then introduced by syringe into the closed large bowel of Dog A, an amount easily accommodated without tension. Allowing twenty minutes for absorption, 10 c.c. of blood was again withdrawn from both portal and femoral veins of Dog A and injected into Dog B. A marked rise in pressure resulted in each case. The curve for the portal blood showed a rise that was quicker in onset, and which reached a maximum 20 mm. of mercury above the normal. The femoral blood produced a slightly lower curve, 18 mm. of mercury, with a slower rise. A repetition of the injection twenty minutes later produced the same type of curve.

This experiment indicated that the large bowel may absorb certain toxic substances, and that if absorbed they apparently reached the systemic circulation in large part, the liver not being entirely effectual in retarding the advance.

Although the possibility of the absorption of toxin is thus proved, it is quite evident that the conditions of the experiment do not at all parallel the findings in the constipated bowel. The fecal mass in an inactive bowel presents an altogether different proposition than liquid poison, developed in vitro, introduced into the empty intestine by a syringe. In order to place the experiment on an analogous basis, three healthy dogs, Dogs 1, 2 and 3, were chosen, and 10 c.c. of blood was drawn from each and citrated. Dog 4 was prepared for blood pressure tracings, and the bloods from Dogs 1, 2 and 3 were injected intravenously, the results to serve as a control. No alteration in blood pressure was noted, and it was considered that the blood of Dogs 1, 2 and 3, under normal conditions, contained no pressor or depressor substances. A fecal specimen was secured from Dog 1, extracted with ether, and the residue taken up in saline solution.[6]

Dogs 1, 2 and 3 were anesthetized, and a condition of constipation induced by the surgical procedure of closing the anus. Quinin and urea hydrochlorid was injected around the site of the wound in Dog 1, and 2 per cent. cocain ointment frequently applied in the case of Dogs 2 and 3. There was no evidence of any suffering in any of the three dogs during the period of the observation. The diet consisted of cooked meat, boiled milk and bread; and, although the appetite appeared to be a bit impaired, the dogs seemed to be in fair spirits, Dogs 1 and 2 remaining in good condition throughout. Dog 3 had a little infection about the anus.

Ten cubic centimeters of blood was drawn from Dog 1 at the end of ninety-six hours, and from

5. Alvarez, W. C.: Origin of the So-Called Autointoxication Symptoms, J. A. M. A. 72:8 (Jan. 4) 1919.

6. Ground with sand in distilled water; rendered alkaline with sodium carbonate; extracted with ether; washed with water and evaporated at room temperature; residue taken up in physiologic sodium chlorid solution.

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Dog 2 at the end of seventy-two hours. The rectum was opened, an enema given, and the stool secured. It was extracted according to the technic followed by Whipple.[7]

Ten cubic centimeters of blood from Dog 3 was drawn at the end of fifty-five hours. No fecal material was secured.

The blood from Dogs 1 and 2 was injected intravenously into Dog 5, prepared for a blood pressure tracing. No evidence of the presence of pressor or depressor substances resulted from either injection. The blood from Dog 3 was given intravenously to Dog 6, prepared for the securing of a blood pressure tracing. Again no alteration in the curve indicated an absence of toxic elements.

We are thus in the possession of evidence that leads us to believe that toxic substances may be absorbed under certain conditions and that, if absorbed, their presence may be demonstrated by an alteration in the blood pressure curve, which in our work resembled an epinephrin curve. The evidence also shows that a retention, with meat as a part of the dietary, of fifty-five, seventy-two and ninety-six hours, respectively, is not attended by an accumulation of poisons in the blood stream, at least to a sufficient degree to make their presence known by physiologic methods. This finding is in harmony with Mutch's[8] forced admission that, if toxins are absorbed from the colon, they are in such minute quantities that pharmacologic activities are probably so very slight as to be negligible. By just what method Mutch arrived at this conclusion is not reported.

TOXIC SUBSTANCES NOT PRESENT IN FECAL MASS

Ten cubic centimeters of the watery extract from the normal feces of Dog 1 was injected intravenously into Dog 5, with no alteration in the curve to indicate the presence of toxic substances.

Twenty-five cubic centimeters of watery extract from the stool secured from the same dog by enema, after ninety-six hours of retention, was injected intravenously into Dog 6. The blood pressure was not altered.

Ten cubic centimeters of watery extract from stool secured from Dog 2—seventy-two hours retention—was injected into Dog 5 and gave a like result.

We are led to conclude from this that the stool is not necessarily charged with the morbific exhalations with which it is credited, and that retention in the colon is a possibility without the accumulation of toxic substances in the fecal mass, at least in sufficient amounts to produce symptoms if absorbed.

There are two suggested explanations for this finding. First, as we approach the splenic flexure, we find that the conditions for the maintenance of bacterial life grow decidedly unfavorable; in fact, in the descending colon very little evidence of putrefaction is detectable. The more exsiccated the feces becomes as a result of retention, the less favorable it is as a habitat for germs. Secondly, those that have studied the bacterial activities of the alimentary tract tell us that the small bowel is specialized for the aseptic absorption of food, while to the large bowel is delegated the bacterial destruction of the residue.[8] It is reasonable to believe that the flora engaged in this work of destruction operates in relays, the intermediary products which may be toxic being seized on by another line of organisms and so on, until the final innocuous bodies are formed. For example, Mellanby[9] found that beta-iminazo, which Mutch reported as a depressor substance provided by bacterial action on histidin, could be obtained only with a pure culture of a certain strain. With other organisms present, it was rendered inert as rapidly as formed.

In his work on the toxemia of intestinal obstruction, Whipple demonstrated that a closed, unwashed loop of colon, including 3 inches (7.5 cm.) of ileum, is not incompatible with perfect health. Whipple locked up bacteria, fecal remnants, intestinal mucus and cell débris, all highly putrescible substances, in the healthy colon of a large dog for ten months without the slightest evidence of toxemia. When the animal was killed, a mass weighing 250 gm. (8⅘ ounces), having the appearance of feces, and containing bacteria and cellular débris, was found. It was extracted and tested by intravenous injection, on three pups with evidence of a very slight intoxication on only one, following a very large dose. Whipple[7] states that this may indicate a trace of toxic material in this closed loop.

These facts lead me to consider that delay in the colon does not necessarily produce such a desperately toxic mess as some people would have us believe.

COMMENT

I have no disposition to deny that cases of autointoxication of intestinal origin do exist. Bainbridge[10] enunciates his belief that this is particularly true in those suffering from a persistent diarrhea. Alvarez is of the same opinion. But I believe that of the constipated an exceedingly small percentage are of this type. Of this one thing, however, I am positive: In the constipated who are relieved of the classical symptoms of "autointoxication" immediately after eliminative processes, there is no intoxication, no blood pollution, no toxic stool. I furthermore believe that the forty-eight hour stasis which is the average revelation of the carmin test in sanatorium guests does not necessarily mean a subtle poisoning that calls for the application of colon massage and *Bacillus acidophilus* therapy.

An announcement of a stasis introduces an element of fear that brings the hapless victim to the point at which the colon dominates his mental processes. He fears that harm is being done to his body. Much of the colon therapy that is being advocated today is aimed at a condition that does not exist—autointoxication—and its value is limited to the possible aid in the establishment of temporary regularity, and in relieving the mental pressure induced by a false doctrine, together with the implantation of a new type of flora that will last not longer than ten days after the patient has returned to his home dietary.[11] Those patients whose fault in this respect, and there are many, is accidentally discovered in the course of a routine examination, and who have no complaint referable to the bowels, might better be passed along without the scare that is usually administered.

Those who complain definitely of constipation and who admit of temporary relief after an enema should

7. Whipple: Toxemia in Intestinal Obstruction, Collected Reprints of the Hooper Foundation **5**, 1920.
8. Mutch, N.: Brit. J. Surg. **2**: 608 (April) 1915.
9. Mellanby, E.: Quart. J. Med. **9**: 165 (April) 1916.
10. Bainbridge: Illinois M. J. **38**: 1 (Jan.) 1922.
11. Rettger, L. F., and Cheplin, H. A.: A Treatise on the Transformation of the Intestinal Flora, New Haven, Conn., Yale University Press, 1921.

be treated to correct the constipation, not the auto-intoxication. We believe that the mechanical theory may account for those definite endocrine symptoms seen in many of these cases of long standing constipation and attributed to poisons in the blood. Continued nerve strain is accredited with the power of ultimate endocrine depletion with its attendant physical decay. The type of case with which we are concerned may exhibit just such a drain on the nervous system, and is in the same way capable of bringing about degenerative changes.

APLASTIC ANEMIA FOLLOWING NEO-ARSPHENAMIN

REPORT OF CASE

S. M. FEINBERG, M.D.
CHICAGO

History.—Mrs. L. M., a Swedish woman, aged 46, was admitted to the medical service of Dr. Frederick Tice at the Cook County Hospital, Feb. 13, 1921, with the following history, which was obtained from her daughter: In the summer of 1919 she was told by her family physician that she had syphilis of the liver. She began treatment for it, which, up to the summer of 1920, consisted of iodids and mercurials, and from then to January, 1921, she received twenty-six injections of neo-arsphenamin. The physician in charge of the treatment states that, except for slight jaundice on several occasions, no reactions followed the injections.

In the beginning of January, 1921, she had a severe sore throat, which persisted. Shortly afterward she had severe epistaxis, for which she was treated at a hospital, without any improvement. At the same time it was noticed that the patient had become extremely pale and was getting rapidly weaker and weaker. Bleeding from the gums, rectum and vagina followed. There is no record of a blood examination at this time. Her condition became progressively worse, but she was discharged from the hospital, February 8, because of lack of funds; she came to the Cook County Hospital, February 13.

Her history was negative for any anemia or any physical incapability. She had always been a hard-working woman and had always been in good health; she had not known of any syphilitic infection at any time. She had five children, who are all well. There had been a miscarriage several years before. Her father died of carcinoma of the stomach; the family history was otherwise negative.

Physical Examination.—The patient was fairly well developed, weighing about 125 pounds (56.7 kg.). Delirium was present on admission. The temperature was 100.5; the pulse, 96, of fair volume and regular; the respiratory rate, 20. The skin was markedly pale, and there was a slight subicteric hue of the skin and sclera. Evidence of recent epistaxis was present. The buccal mucosa and gums showed a marked pallor. There were numerous hemorrhages beneath the mucosa, varying from punctate petechiae to hemorrhagic areas about 1 cm. (⅜ inch) in diameter. The gums were bleeding freely, and a fetid odor was present from the mouth. The liver was palpable about 1 finger's breadth below the costal margin; the spleen could not be palpated. The urinary bladder was considerably distended. Several subcutaneous hemorrhages were present over the extremities. There was profuse and persistent uterine hemorrhage. All other findings were negative.

Laboratory Findings.—The urine was normal in all respects, and contained no blood or urobilin. The stools contained considerable blood, both chemically and microscopically. The blood Wassermann reaction was negative. The blood was very pale, with a coagulation time of twenty minutes; hemoglobin, 15 per cent.; erythrocytes, 880,000, and leukocytes, 1,600 per cubic millimeter. The stained blood showed 70 per cent. lymphocytes, chiefly of the small variety. No abnormal white cells were found. The red blood cells were very little different from those found in normal blood, there being no nucleated cells, no basophilic degeneration, and very slight variation in size or shape. An exact blood platelet count was not made, but it was noticed that platelets were almost entirely absent.

Course.—The condition of the patient continued to become aggravated. The temperature dropped to 98 on the 14th, but began to rise on the 16th, reaching its peak of 103 on the 19th, and then dropping to subnormal. Involuntary bowel movements and obstinate urinary retention were present throughout the entire course. Two blood transfusions were done, on the 15th and 19th, respectively, with very little improvement; and the patient died, February 23.

Necropsy Findings.—Petechial hemorrhages were numerous and widespread, involving the upper and the lower extremities, leptomeninges, pleura, epicardium, myocardium, kidneys and endometrium. There was a large blood clot in the vagina; there were two hemorrhagic cysts in the right ovary. There was marked anemia of the myocardium, liver, kidneys and spleen. The spleen was not enlarged, and, except for pallor, it was normal in all respects. Cholelithiasis was present, and the liver reached 1 finger's breadth below the costal margin, but was otherwise normal. There were no signs of syphilis in any of the organs. The marrow taken from a rib was yellowish-brown, with only small areolas of red marrow.

Microscopic examination of the bone marrow revealed a marked diminution of erythroblasts and myelocytes. Megalokaryocytes were also diminished. The preponderating cells were small lymphocytes.

COMMENT

Thus far there have been only two or three causes definitely connected with the etiology of secondary aplastic anemia. It has been shown by Frank [1] and others that intensive roentgen-ray exposure will cause atrophy of the bone marrow, and Frank and Grünberg [2] report a case of myelogenous leukemia which, by intensive roentgen-ray treatment, was turned into an aplastic anemia. Sautesson [3] and Selling [4] have shown that severe benzene (benzol) poisoning will sometimes cause an aplastic anemia. That arsphenamin has a distinct effect on the hematopoietic organs is shown by its beneficial effect in small doses on pernicious anemia.[5] Destructive results have also been reported by Rumpel [6] and Leede.[7] Hemorrhagic spots following arsphenamin treatment have been reported by Hutmel;[8] and Lerrede [9] reports subcutaneous hemorrhages in a young man, and bleeding from the gums and nose in a young woman.

Goerke [10] of the University of Breslau has recently reported two cases of aplastic anemia following administration of neo-arsphenamin, which seem to be identical with the case described above. A similar case was reported recently by Moore and Keidel.[11]

The case described in this paper is evidently one of aplastic anemia secondary to neo-arsphenamin administration. This case is reported because of its rarity in the literature and because it points out one of the possible complications of neo-arsphenamin, which has thus far been chiefly overlooked.

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1. Frank, E.: Berlin. klin. Wchnschr. **37**: 41, 1915.
2. Frank and Grünberg: Inaug. Diss., Breslau, 1916.
3. Sautesson: Arch. f. Hyg. **37**.
4. Selling: Bull. Johns Hopkins Hosp. **21**: 33 (Feb.) 1910.
5. Bramwell: Clinical Studies of Edinburgh, 1906, 1907, 1913. Lampe: Med. Klin. **12**: 1228, 1916.
6. Rumpel: Deutsch. med. Wchnschr. **36**: 2286, 1910.
7. Leede: München. med. Wchnschr. **58**: 1184, 1911.
8. Hutmel: Jahrb. f. Kinderh., 1916.
9. Lereddе: Rev. gen. d Clin. et Therap. **33**: 33, 1919.
10. Goerke: München. med. Wchnschr. **67**: 1226 (Oct.) 1920.
11. Moore, J. E., and Keidel, Albert: Stomatitis and Aplastic Anemia Due to Neo-Arsphenamin, Arch. Dermat. & Syph. **4**: 169 (Aug.) 1921.

Morbid Doubt.—There is a morbid kind of doubt, which resembles a weak stomach. Everything is swallowed, but nothing retained; everything is received, but nothing digested. The consequence is emaciation, exhaustion, consumption, and premature death.—Strindberg, "Zones of the Spirit."

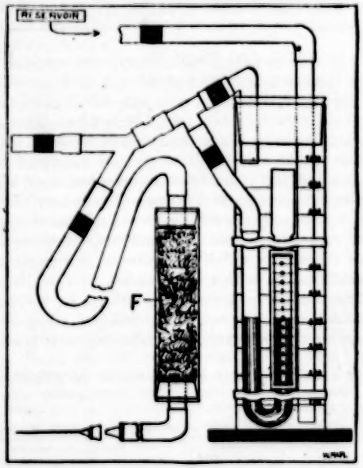
Clinical Notes, Suggestions, and New Instruments

A SIMPLE INFLATION APPARATUS

WRIGHT MACMILLAN, M.D., PASSAIC, N. J.

Since apparatus on the market for inducing pneumothorax seemed to be unnecessarily complicated and expensive, the arrangement illustrated in the accompanying diagram was devised and found practicable in use. The principle is the same as that illustrated in DaCosta's "Modern Surgery" as Brauer and Spengler's modification of Murphy's apparatus, but the details are much simplified and the materials are readily accessible.

The requirements for successful inflation are met in the following ways: (1) The pressure of the injected gas can be delicately graded and gaged by raising or lowering the water reservoir. (2) Measurement of the amount of gas injected can be determined by lowering the reservoir to bring the



Inflation apparatus: The "reservoir" is an irrigation can. *A*, *B*, *C* and *D* are clamps. The tube from Clamp *D* is extended to a gas tank if air is not used.

remaining gas in the cylinder under atmospheric pressure and reading the amount of water in the cylinder. (3) Pressure in the cavity being injected is read quickly at any time during the operation by closing Clamp *B* and opening *C*. (4) If hot water is used in the reservoir, the gas will be warmed and moistened. (5) Experience shows that air infection is rare, but from a knowledge of the properties of bacteria we must confess that it is possible. This chance of infection is eliminated by the strainer of sterile cotton, *F*.

The materials used in making the apparatus are rubber tubing with glass tubing to fit; a U-tube with a 6 mm. lumen for the manometer; a liter cylinder graduate fitted with a two-holed rubber stopper; a strainer, consisting of a glass tube 25 cm. long and 4 cm. in diameter. This is packed fully but not tightly with cotton held in by two small wads of gauze, and fitted with two one-holed rubber stoppers. Other materials are tube clamps, adhesive plaster to attach the manometer, and an adapter for the needle. Before use, the strainer with the distally attached tubing is autoclaved and dried. All joints must be made positively air tight with rubber cement, and the clamps much be such that their imperviousness when closed can be relied on. These materials are assembled as shown in the diagram.

For inducing pneumothorax, information on the precautions in selecting the patient, and the surgical details are easily accessible elsewhere. In using the apparatus, the cylinder is placed on a table by the patient's bed and the reservoir hung on a hook at a height of about 6 feet. The cylinder is empty, and Clamp *B* and Clamp *D*, the air inlet, are closed. *A* is always open in ordinary use. *C* and *E* are open, connecting the needle through the strainer only with the manometer. An assistant watches the manometer intently as the needle pierces the chest wall. Just as the pleural cavity is entered, there is a slight fluctuation of the water in the manometer with a sudden stop due to pressure of the visceral pleura over the needle opening. No movement in the manometer ever occurs until the pleura is punctured, and occasionally is absent then, owing to clogging of the needle or immediate pressure against the visceral layer. When the pleural sac is entered the manometer is shut off at once by closing Clamp *C*, and *B* is opened, allowing air to pass. The inflow should be stopped frequently and the intrathoracic pressure noted. If only a small amount of air has entered and the pressure is positive, adhesions are present and the inflation should be stopped. The intrathoracic pressure should not exceed 5 cm. of water at any time. At the first injection the lung should be left under 1 or 2 cm. of negative pressure except in the case of hemorrhage when complete collapse is desired. To refill the cylinder with air or gas, the reservoir is lowered to siphon out the water, is opened to allow the inflow of air or gas, *B* and *D* are opened, *C* and *E* closed. If nitrogen or oxygen is used, the tube from Clamp *D* leads to the gas tank instead of being open.

This apparatus was devised by me in 1918, and has been used since that time at the Davidson County Tuberculosis Hospital, Nashville, Tenn. Here I used it only with air for inducing pneumothorax in the treatment of tuberculosis, to arrest pulmonary hemorrhage, and in acute dry pleurisy without adhesions to separate the layers of the pleura. The effect of this treatment on the pain of pleurisy was remarkable in some cases.

Other uses for which the apparatus is suited are: (1) the induction of pneumoperitoneum for roentgenography and the treatment of tuberculous peritonitis; (2) perflation of the uterine tubes; (3) the induction of perirenal emphysema; (4) inflation of the intestine for intussusception; (5) distention of the bladder for cystoscopy, and (6) injection of gas into the ventricles of the brain for roentgenography.

99 Gregory Avenue.

INFECTED EXTRA-UTERINE PREGNANCY RUPTURING INTO BLADDER AFTER THIRTEEN YEARS, WITH DISCHARGE OF FETAL BONES THROUGH URETHRA

MAURICE KAHN, M.D., LOS ANGELES

Mrs. K., an Austrian, aged 57, multipara, widowed fourteen years, whose early history was unimportant, three months prior to her husband's death was curetted for irregular bleeding considered due to a miscarriage, after which time she suffered from right pelvic pain. Eight years before I saw her the menopause occurred, and she looked hopefully forward for a cessation of her pelvic distress; but the condition persisted, and a year and a half ago it was complicated by the development of a severe dysuria which grew steadily worse until six months ago when incontinence occurred, and this continued uninterruptedly. During the period of incontinence she would occasionally pass a small bone from the urethra, attended with excruciating pain.

The woman was greatly emaciated and in extremely poor condition. Several superficial decubital ulcers appeared on the buttocks. Vaginitis was present, and a markedly red and pouting meatus was noted. On account of great tenderness, the examination was unsatisfactory, though a mass in the culdesac and right pelvis could be made out. A stone was felt in the upper urethra. Decomposed and purulent urine dribbled from the patient, and her condition was pitiful, precluding any extensive operation. On account of her great pain and miserable plight, however, it was decided to remove

the urethral stone and make an effort to improve her condition so that she might withstand an operation.

A day later, under local anesthesia, and with a finger in the vagina pressing up behind the stone to prevent its being forced into the bladder in attempts to grasp it with forceps, the stone, the size of a hazelnut, was easily removed. A few fetal ribs and two fetal femora were removed at the same time from the bladder through the urethra. These bones were calcified and of stony hardness, and when dropped on the tiled floor sounded like nails. The woman died on the following day.

A partial necropsy revealed the small intestine adherent to a sac in the right pelvis about the size of the bladder, with which it communicated by an opening admitting two fingers. Both the bladder and the sac contained more bones, including ribs and pieces of the skull, all calcified as were the others.

Usually I am not overcredulous of a woman's statement, if the conditions found are at variance with the history; but in the present case the symptoms all date back fourteen years, to the time of the curettage. Moreover, the menopause occurred eight years ago, after which time we may at least assume that a pregnancy had not taken place. As it requires no greater stretch of imagination to assume that the extra-uterine pregnancy occurred fourteen years previously, the time from which all symptoms date, than it does to assume that it happened, say, just prior to the menopause eight years ago, I am inclined to believe that it actually took place fourteen years ago. So we have the following outline of the case:

Fourteen years ago, rupture of an extra-uterine pregnancy.

Eight years ago, menopause.

One and a half years ago, rupture of extra-uterine sac into the bladder.

Six months ago, first passage of encrusted fetal bones through the urethra.

Death.

1111 Brockman Building.

Special Article

TYPHOID IN THE LARGE CITIES OF THE UNITED STATES IN 1921

TENTH ANNUAL REPORT

THE JOURNAL presents its tenth annual survey[1] of typhoid fever mortality in the cities of the United States having more then 100,000 population. The corrected statistics of the fourteenth census are now available, and the grouping of cities according to population has been revised to correspond with the latest enumeration.[2]

There are now sixty-nine cities with a population of more than 100,000. These may be conveniently considered for our purpose in six groups. More than one fourth of the population of the United States lives in these cities, and nearly one sixth lives in the twelve cities with more than 500,000 population.

As was the case in 1920, every one of the twelve largest cities (Group 1, more than 500,000 population) had a typhoid death rate under 10, and as in 1920 also, all but two had a rate under 5. It could hardly be expected, however, that the rapid decline of the last few years would continue uniformly without a check. In this group (Table 2) we find that seven of the twelve cities showed a slight typhoid increase in 1921, three showed a decrease, and two maintained the same rate. The decrease in Philadelphia and Buffalo is especially noteworthy, the rate in the former city being remarkably low.

TABLE 1.—CLASSIFICATION OF CITIES

	Population	Number of Cities
Group 1.	More than 500,000	12
Group 2.	From 300,000 to 500,000	9
Group 3.	From 200,000 to 300,000	12
Group 4.	From 150,000 to 200,000	10
Group 5.	From 125,000 to 150,000	9
Group 6.	From 100,000 to 125,000	17

The New York City Health Department continues to publish the most complete typhoid record of any of the large cities. In 1921 there were only 899 verified cases of typhoid reported, and only 124 deaths. The percentage of cases in which the probable mode of infection was traced rose to 40, as compared with 35.6 in the preceding year. Out-of-town infection stood highest in the list, as many as 238 cases (26 per cent.) being traced to this source. Ninety-seven cases were traced to contact infection, and an almost negligible number to flies (three) and shell fish (five). No single case was attributed to milk contamination. More than 60 per cent. of the patients were treated in hospitals. Immunization was given to a number of persons exposed to typhoid cases, but relatively few persons in the general civilian population voluntarily sought immunization. This annual analysis of typhoid cases by the New York City Health Department not only constitutes a valuable record, but is a distinct incentive to the detailed study of cases and the detection of sources of infection.

Detroit is another city in which careful study has been made of the typhoid situation. During June, July, August and September, 247 cases of typhoid were

TABLE 2.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 1 (MORE THAN 500,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1921	1920	Average 1916-1920	Average 1911-1915	Average 1908-1910
Chicago	1.1	1.1	2.4	8.2	15.8
New York	2.1	2.4	3.2	8.0	13.5
Philadelphia	2.3	3.3	4.9	11.2	41.7
Los Angeles	2.6	2.6	3.6	10.7	19.0
Boston	3.1	1.5	2.5	8.0	16.0
Cleveland	3.4	3.2	4.0	10.0	15.7
St. Louis	3.8	2.7	6.5	12.1	14.7
Pittsburgh	4.1	2.7	7.7	15.9	43.0
San Francisco	4.2	3.1	4.6	13.6	27.2
Buffalo	4.2	5.1	8.1	15.4	22.8
Baltimore	5.4	4.7	11.8	23.7	35.1
Detroit*	5.8	5.1	8.1	15.4	22.8

* The Detroit rate for 1921 is based not on the U. S. Census estimate, but on the board of education census of May, 1921, which is believed to be more accurate.

1. The preceding articles were published May 31, 1913, p. 1702; May 9, 1914, p. 1473; April 17, 1915, p. 1322; April 22, 1916, p. 1305; March 17, 1917, p. 845; March 16, 1918, p. 777; April 5, 1919, p. 997; March 6, 1920, p. 672, and March 26, 1921, p. 860.

2. The number of typhoid deaths has been sent us by the local officer of health, and the rates have been calculated in most cases on the basis of the midyear 1921 population estimates made by the U. S. Census Bureau. In a few instances indicated in the text other estimates have been employed. It may perhaps be noted that the figures kindly furnished us by the municipal officials include all typhoid deaths that have occurred within the city limits, nonresidents as well as residents. In some instances this undoubtedly gives an exaggerated impression of the amount of typhoid fever in a community, but at present statisticians are agreed that "the attempt to eliminate the deaths of nonresidents would often result in an understatement of the true mortality" (Bureau of the Census, Mortality Statistics, 1912, p. 13). No attempt has been made to revise the averages of preceding years, since in most cases the figures would be changed but slightly.

investigated by the Detroit Department of Health. A much smaller proportion of the total number was traced to out-of-town infection than was the case in New York City, only sixteen, or about 8.3 per cent., being regarded as surely coming from this source. Thirty-five additional cases were regarded as possibly infected in out-of-town localities. Bathing in polluted water was considered an important source of trouble; forty-three persons apparently received infection in this way. It was believed that the very hot weather of the summer of 1921 led to an unusual amount of bathing, which in turn caused an excessive amount of typhoid due to this factor.

A thorough study of typhoid fever in Cleveland for the years prior to 1921 is now available.[3] The cases attributed to out-of-town infection in 1920 amounted to 27 per cent. of those reported. Not a single case was traced to milk contamination. An outbreak among the guests at a country club luncheon included forty cases and two deaths, and was due to a carrier among the caterer's assistants.

It is very clear that detailed studies of this sort will facilitate comparison between conditions in these cities, and will serve to point out typhoid sources and the proper means of prevention.

Nearly all the cities in Group 1 have satisfactory water supplies. Indeed, if this were not the case, rates so low as those here recorded could hardly be hoped for. Several cities, however, in this group depend altogether or chiefly on chlorination. Cleveland, which relied solely on chlorination for some years, now has in operation a well constructed filter supplying the larger part of the city. Detroit is looking forward to the completion of a filtering project. Buffalo, however, where local conditions of the water supply are not highly satisfactory, still depends entirely on chlorination. It is the opinion of some sanitarians[4] that Buffalo should provide its citizens with filtered water both for safety and for general cleanliness.

TABLE 3.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 2 (FROM 300,000 TO 500,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1921	1920	Average 1916-1920	Average 1911-1915	Average 1906-1910
Minneapolis	1.2	2.6	5.0	10.6	32.1
Milwaukee	1.9	2.2	6.5	13.6	27.0
Seattle*	2.2	1.9	2.9	5.7	25.2
Newark	2.8	1.9	3.3	6.8	14.6
Cincinnati	2.4	3.0	3.4	7.8	30.1
Washington*	6.6	6.5	9.5	17.2	36.7
Indianapolis	7.3	3.8	10.3	20.5	30.4
New Orleans	9.3	7.4	17.5	20.9	35.6
Kansas City, Mo.	11.0	7.6	10.6	16.2	35.6

* Enumerated population, Jan. 1, 1920.

The cities of Group 2 (from 300,000 to 500,000 population) show the same tendency to higher rates as was observed in the cities in Group 1, only two of the nine (Minneapolis and Milwaukee) experiencing a typhoid decrease in 1921 as compared with 1920 (Table 3). The increases are not large, however, except in Indianapolis and in Kansas City, Mo., the changes in the Seattle, Cincinnati and Washington rates being very slight.

New Orleans again shows a relatively low rate. It is thought by the local health authorities that the number of imported cases, which doubtless swell the typhoid rate more or less in every large city, is excessively high in New Orleans, owing to the fact that there are no other large cities within twelve hours' travel and to other local factors. At all events, considering the large negro population, the semitropical climate and other conditions, the typhoid figures in New Orleans for the last three years cannot be regarded as other than highly creditable.

TABLE 4.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 3 (FROM 200,000 TO 300,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1921	1920	Average 1916-1920	Average 1911-1915	Average 1906-1910
Oakland	1.3	5.5	3.8	8.7	21.5
Providence	2.5	3.8	4.4	10.2	14.3
Portland, Ore.	3.0	3.5	4.5	10.8	23.2
Rochester	3.2	1.0	2.9	9.6	12.8
Jersey City	3.5	6.7	4.5	7.2	12.6
Columbus, Ohio	4.0	2.5	7.1	13.5	40.0
Denver	4.5	5.0	5.8	12.0	37.5
Louisville	5.5	5.5	9.7	19.7	32.7
Akron	5.7	8.7	....	....	....
St. Paul	7.1	2.1	3.1	9.2	12.8
Toledo	8.6	7.8	10.6	31.4	37.5
Atlanta	11.0	12.8	14.2	31.4	58.4

Minneapolis, which had a particularly low typhoid death rate in 1921, suffered in March from an explosive outbreak of typhoid among the students in the University of Minnesota. Approximately 100 cases were reported from this source, and it was said that typhoid was carried into distant parts of the state by students returning to their homes during the Easter vacation. The cause was traced to a woman employee in the kitchen of the university cafeteria. Apparently this woman, while suffering from a mild case of typhoid, kept about her work, and it was presumed that contamination of the milk served in the cafeteria occurred through her agency. The death rate in this outbreak does not seem to have been very high, but the lesson was a sharp one. It seems strange that closer supervision was not exercised by the university authorities over those persons engaged in the handling and distribution of food, especially since a number of American universities have been using definite precautions for some years to protect their students against just such a happening.

Milwaukee maintains a surprisingly low typhoid rate by the application of water chlorination, as has been pointed out previously. The dangerously contaminated condition of the Milwaukee water supply necessitates unceasing vigilance in chlorination. The efficiency with which this procedure seems to be carried out constitutes a notable achievement in sanitation.

Kansas City, Mo., is at the bottom of the list in 1921, as it was in 1920. The water supply of this city has long been a source of concern to the city officials. A comprehensive report by a body of experts on the water-works situation was published during the year. The Missouri River is recommended as the most eco-

3. Perkins, R. G.: Typhoid Fever in Cleveland, Ohio, for the Years 1918, 1919, 1920, Pub. Health Rep. 36:1095 (May 20) 1921.
4. Engineering News-Record, March 24, 1921.

nomical and feasible source. Analyses indicated that such pollution as exists would be easily removable by filtration. The consulting engineers advise pushing construction with all possible haste.

The cities of the third group (from 200,000 to 300,000 population) show less proportional increase than the larger cities (Table 4). In fact, the cities in this group showing an increase are in the minority. Louisville ties its low record of 1920, a sanitary achievement of note. Three Northern cities, Akron, St. Paul and Toledo, all had higher rates than Louisville in 1921. The increase in St. Paul (from 2.1 to 7.1) has received no explanation. At the time of the epidemic among the students of the University of Minnesota, St. Paul was virtually free from typhoid. Toledo continues to maintain a high rate for a Northern city. The average Toledo rate for the last five years is an indication that some of the conditions in that city need to be remedied. Atlanta has lowered its rate, compared with 1920. The rate of 11.0 in that city in 1921 would have been regarded a decade ago as a very low rate for any community, and as extraordinarily low for a Southern city.

Group 4 (from 150,000 to 200,000 population) shows a decline in six of the ten cities (Table 5). Five cities are in the Southern states, and all of these have higher rates than the five Northern cities, although showing marked improvement over the rates of a decade ago. Memphis, for the second year in succession, has a very low rate, indicating continued success with water chlorination. It will be remembered that this method of treatment was introduced in Memphis after the serious 1919 water-borne outbreak, which increased the rate to over 58. Richmond, in this group, is a close competitor with Louisville in Group 3 for the honor of the lowest rate among Southern cities; 1921 was the fifth consecutive year in which Richmond has had a typhoid death rate under 10.0, and the rate for 1921 was the lowest ever recorded, with the exception of 1919.

TABLE 5.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 4 (FROM 150,000 TO 200,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1921	1920	Average 1916-1920	Average 1911-1915	Average 1906-1910
Worcester	3.2	1.7	3.5	5.0	11.8
Syracuse	3.9	4.0	7.7	12.3	15.6
Omaha	4.0	7.8	5.7	14.9	40.7
New Haven	4.7	6.1	6.6	18.2	30.8
Dayton*	5.2	7.1	9.3	14.8	22.5
Richmond	5.6	4.4	9.7	15.7	34.0
Memphis	9.0	8.0	27.7	42.5	35.3
Dallas	12.7	14.3	17.2	....	....
San Antonio	16.6	9.9	23.3	29.5	....
Birmingham	17.0	14.4	31.5	....	....

* Enumerated population, Jan. 1, 1920.

Syracuse maintains for 1921 a rate substantially the same as that reported in 1920, in spite of the fact that a milk-borne outbreak occurred in August and September, in which it is stated that there were as many as seventy-five cases on a single milk route. The mortality in this epidemic, however, does not seem to have been high. An important practical result of this outbreak was the passage of an ordinance requiring general milk pasteurization. It is safe to predict that proper enforcement of this regulation will result in still less typhoid in Syracuse in the future. It is unfortunate that a sharp lesson in the form of an explosive typhoid outbreak is often necessary before public opinion will support compulsory pasteurization. As such milk-borne outbreaks become more rare all over the country, each occurrence will attract greater attention and will affect public opinion with more and more dramatic force. It is to be hoped that the swift retribution of negligence need not be too often repeated, and that other cities learning of the experience at Syracuse will take the lesson to heart for themselves.

TABLE 6.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 5 (FROM 125,000 TO 150,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1921	1920	Average 1916-1920	Average 1911-1915	Average 1906-1910
Des Moines	1.4	....	....	....	....
Bridgeport, Conn.*	2.7	1.4	4.8	5.0	10.5
Grand Rapids	2.8	2.2	9.1	25.5	29.7
Springfield, Mass.	4.4	4.6	4.4	17.6	....
Paterson, N. J.	5.8	1.5	4.1	9.1	19.3
Scranton, Pa.	6.5	1.5	3.8	9.3	31.5
Hartford, Conn.	7.2	2.9	6.0	15.9	19.0
Houston, Texas	11.7	....	....	....	....
Youngstown, Ohio	15.0	6.7	....	....	....

* Enumerated population, Jan. 1, 1920.

The low death rate in New Haven (4.7) is typical of the change that has taken place in the last two decades in nearly all reasonably clean, well-administered American cities. Ten years ago the typhoid rate in New Haven was 23.44, and fifteen years ago it was 52.5. At present, certain causal factors that a few years since would have been overlooked or regarded as relatively negligible are now matters of concern. A considerable proportion of the typhoid in New Haven is said to occur among boys who have indulged in swimming in the polluted water of the harbor.

Group 5 (from 125,000 to 150,000 population) and Group 6 (from 100,000 to 125,000 population) show greater irregularities in their typhoid rates from year to year than do the larger cities (Tables 6 and 7). This would be expected on statistical grounds. Four

TABLE 7.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 6 (FROM 100,000 TO 125,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1921	1920	Average 1916-1920	Average 1911-1915	Average 1906-1910
New Bedford	2.3	10.6	6.0	15.0	16.1
Fall River	2.4	5.0	8.5	13.4	13.5
Yonkers	2.9	0.0	4.8	5.0	10.3
Tacoma	3.0	1.5	2.9	10.4	19.0
Norfolk	4.1	3.4	....	....	....
Albany	4.3	3.5	8.9	18.6	17.4
Wilmington	4.4	....	....	....	....
Spokane	4.7	6.7	4.9	17.1	50.3
Kansas City, Kan.	4.8	2.9	9.4	....	....
Lowell	5.2	2.7	5.2	10.2	13.9
Salt Lake City	5.7	5.9	9.3	13.2	....
Camden	6.6	3.4	4.9	4.5	....
Trenton	8.9	8.2	8.6	22.3	....
Fort Worth	10.7	....	....	....	....
Cambridge	10.8	2.7	2.5	4.0	9.8
Reading	11.7	5.6	10.0	31.9	42.0
Nashville	20.4	9.3	20.7	40.2	61.2

cities (Des Moines, Wilmington, Houston and Fort Worth) appear for the first time in our tables. The two Southern cities have higher rates than the Northern cities, but their relative position is by no means discouraging. Des Moines, on its first appearance, broke gloriously into the honor class, with one of the lowest typhoid rates in the country. The cities in these two groups (especially Group 6) are probably best compared by their five year averages. New Bedford, which had a relatively high rate in 1920, has the lowest rate in its group in 1921. Cambridge, Mass., had in 1921 the highest rate for many years, higher, indeed, than any five-year average since 1906. Is anything wrong with the water supply? Nashville, after a splendidly low rate in 1920, recorded a rate above 20 in 1921.

There is no doubt that 1921 was, relatively speaking, a "typhoid year." Not only did the majority of cities experience an increase—although generally slight—over the typhoid rate of the previous year, but the Honor Roll, including cities with a rate under 2.0, numbered only five, as against ten in 1920 and eight in 1919. Cities with a rate over 10.0 increased in number from five in 1920 to eleven in 1921. The average death

TABLE 8.—DEATH RATES FROM TYPHOID IN 1921

Honor Roll from (0.0 to 2.0)			
Chicago	1.1	Des Moines	1.4
Minneapolis	1.2	Milwaukee	1.9
Oakland	1.3		
First Rank (from 2.0 to 5.0)			
New York	2.1	Cincinnati	3.4
Seattle	2.2	Jersey City	3.5
Philadelphia	2.3	St. Louis	3.8
New Bedford	2.3	Syracuse	3.9
Fall River	2.4	Omaha	4.0
Providence	2.5	Columbus, Ohio	4.0
Los Angeles	2.6	Norfolk	4.1
Bridgeport, Conn.	2.7	Pittsburgh	4.1
Grand Rapids	2.8	San Francisco	4.2
Newark	2.8	Buffalo	4.2
Yonkers	2.9	Albany	4.3
Tacoma	3.0	Springfield, Mass.	4.4
Portland, Ore.	3.1	Wilmington	4.4
Boston	3.1	Denver	4.5
Rochester	3.2	New Haven	4.7
Worcester	3.2	Spokane	4.7
Cleveland	3.4	Kansas City, Kan.	4.8
Second Rank (from 5.0 to 10.0)			
Dayton	5.2	Camden	6.6
Lowell	5.2	Washington	6.6
Baltimore	5.4	St. Paul	7.1
Louisville	5.5	Hartford	7.2
Richmond	5.6	Indianapolis	7.3
Akron	5.7	Toledo	8.6
Salt Lake City	5.7	Trenton	8.9
Detroit	5.8	Memphis	9.0
Paterson, N. J.	5.8	New Orleans	9.3
Scranton	6.5		
Third Rank (from 10 to 20)			
Fort Worth	10.7	Reading	11.7
Cambridge	10.8	Dallas	12.7
Kansas City, Mo.	11.0	Youngstown, Ohio	15.0
Atlanta	11.0	San Antonio	16.6
Houston	11.7	Birmingham	17.0
Over 20			
Nashville	20.4		

rates by groups (Table 9) also indicate that the typhoid increase was widespread. The actual rate increase for the whole group of sixty-nine cities with a population of 28,291,435 is, however, not matter for serious concern. The 1921 typhoid rate for all these large cities combined was the lowest on record, with the single exception of 1920 (Table 9), and was less than half the rate for 1916. Once before in the course of these annual typhoid calculations (1913, Table 10) a slight increase over the rate of the preceding year has occurred. This was followed the next year by a substantial decrease. There is no reason to conclude that the end of typhoid reduction has yet been reached. Even now, 1,138 deaths from typhoid in a population of more than 28,000,000 must be regarded as too many.

TABLE 9.—AVERAGE DEATHS FROM TYPHOID PER HUNDRED THOUSAND IN EACH GROUP, 1916, 1917, 1918, 1919, 1920 and 1921

Group	Year	No. of Cities	Total Population	No. of Typhoid Deaths	Av. Deaths per 100,000
1	1916	9	13,743,746	854	6.2
1	1917	9	14,027,263	774	5.5
1	1918	9	13,809,901	568	4.3
1	1919	9	13,019,516	463	3.1
1	1920	12	16,526,740	460	2.8
1	1921	12	16,851,750	460	2.7
2	1916	10	4,053,281	344	8.5
2	1917	10	4,150,009	229	7.9
2	1918	10	4,372,088	298	6.8
2	1919	10	4,511,181	204	4.5
2	1920	9	3,463,760	141	4.1
2	1921	9	3,498,783	174	4.9
3	1916	10	2,635,583	248	9.4
3	1917	10	2,701,029	173	6.4
3	1918	10	2,773,716	193	6.9
3	1919	10	2,839,002	134	4.7
3	1920	12	2,951,373	142	4.8
3	1921	12	2,960,971	148	4.9
4	1916	14	2,250,991	330	14.7
4	1917	14	2,310,372	307	13.3
4	1918	14	2,449,736	321	13.5
4	1919	14	2,504,860	210	8.3
4	1920	10	1,707,024	135	7.9
4	1921	10	1,740,360	143	8.2
5	1916	17	1,963,918	235	11.8
5	1917	17	2,031,313	229	11.3
5	1918	17	2,053,215	240	11.7
5	1919	17	2,108,710	115	5.5
5	1920	7	982,436	46	4.8
5	1921	8	1,123,181	70	6.2
6	1920	15	1,718,166	83	4.8
6	1921	17	1,948,414	132	6.7
Total...	1916	60	25,667,919	2,011	8.1
Total...	1917	60	25,220,076	1,812	7.2
Total...	1918	60	25,458,656	1,660	6.5
Total...	1919	60	27,025,259	1,126	4.2
Total...	1920	65	27,330,499	1,007	3.7
Total...	1921	69	28,291,435	1,138	4.0

TABLE 10.—TOTAL AVERAGE TYPHOID DEATH RATE (1910-1921)

	Total Population (57 Cities)* Estimated by the U. S. Census Bureau Methods	Typhoid Deaths	Typhoid Death Rate per 100,000
1910	20,966,625	4,114	19.59
1911	21,545,014	3,391	15.74
1912	22,005,963	2,775	12.56
1913	22,642,972	2,892	12.77
1914	23,191,951	2,408	10.38
1915	23,740,980	2,068	8.71
1916	24,305,359	1,842	7.61
1917	24,740,068	1,647	6.65
1918	24,971,278	1,557	6.23
1919	25,320,186	987	3.87
1920	26,154,013	921	3.52
1921	26,561,469	978	3.68

* Eleven cities are omitted from this summary because data for the full period are not available.

The Highest Wisdom.—The mass of people believe that all which is difficult to understand is deep, but it is not so. What is difficult to understand is immature, vague, and often false. The highest wisdom is simple, clear and goes through the brain straight into the heart.—Strindberg, "Zones of the Spirit."

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SATURDAY, MARCH 25, 1922

TYPHOID FEVER IN THE CITIES OF THE UNITED STATES

The Journal's tenth annual survey of typhoid fever in the large cities of the United States, printed elsewhere in this issue,[1] is marked by the first break in the decline that until now has been noted each year since 1913. The increase, however, is so slight as to be almost negligible from the public health point of view. Not all cities have shared in this increase, and in some a definite typhoid diminution has been observed. There is no doubt, however, that 1921 was in many localities what used to be termed "a typhoid year." This is shown not only by the distinct, if slight, reversal of the typhoid curve of the cities under consideration, and by the frequent comment, made by many health departments, about excessive typhoid in the summer of 1921, but also by the reported case rates[2] for the first eleven months of 1921. These case rates, although open to many and obvious sources of error, indicate an excessive prevalence of typhoid, especially in the months of July and August, as compared with the same months of 1920.

An absolutely uninterrupted decline in city typhoid rates is hardly to be expected under any conditions, but it is interesting to speculate about the factors that may have led to the typhoid excess in 1921 over 1920. The suggestion that sanitary precautions were being relaxed may be quite readily dismissed, since there is no evidence whatever that the campaign against typhoid by municipal authorities has lessened in thoroughness and vigilance. All *a priori* reasoning is also against this view. The opinion has been expressed that the effect of typhoid vaccination was wearing off so that the number of susceptible individuals in the community was increasing. Such meager facts as we have do not support this opinion, but rather favor the assumption that a considerable proportion of the recruits who were vaccinated in the army camps still possess a measure of immunity to typhoid.

The excessively hot weather of the summer of 1921 in many parts of the United States may, on the other hand, have been a factor in raising the frequency of typhoid occurrence, either indirectly by increasing the amount of bathing in polluted waters—as conjectured to be the case in many localities—or directly, by increasing human susceptibility to typhoid infection. We must move cautiously in attributing much importance to the latter factor, but it is to be reckoned a possibility. The relatively high typhoid case rates in July and August, 1921, point in this direction. It is tempting to conclude that the abnormally hot summer was in large part responsible for the higher typhoid rates in certain localities, but a dogmatic assertion is hardly warranted.

From the returns received and other information gathered, there can be no doubt that the number of typhoid deaths in the large cities is much greater than the number that should be properly debited to infection contracted within the cities themselves. Hundreds of patients contracting infection in neighboring towns and villages are brought into the city hospitals, and many city residents themselves acquire infection while traveling. It might be fairly estimated that not more than two thirds or possibly one half of the typhoid deaths occurring in the larger American cities at the present time are due to infection acquired within the cities themselves.

The outlook for continued typhoid reduction is still promising. City water supplies in the larger cities of the United States, thanks to filtration and chlorination, have virtually ceased to be bearers of typhoid infection. Milk supplies, likewise, particularly in the larger cities where general pasteurization is in force, are relatively rarely the cause of typhoid outbreaks. Wherever it is true that typhoid carriers are at present the chief agent in keeping alive typhoid infection, the outlook is distinctly encouraging. Elimination of the major sources of typhoid will sooner or later operate to lessen the number of carriers, so that carrier infection will become less frequent and more easily detected. If we may venture a prediction, it is that the year 1922, or, at all events 1923, will have a lower typhoid rate than 1920, the lowest record heretofore reached.

1. Typhoid in the Large Cities of the United States in 1921, this issue, p. 890.
2. Typhoid Fever in the United States, Pub. Health Rep. 37: 349 (Feb. 17) 1922.

FACTORS IN THE RESISTANCE TO TUBERCULOSIS

Bearing in mind the widespread existence of infection with the bacillus of tuberculosis, one cannot avoid the conviction that important natural devices which confer at least a relative immunity to the fatal encroachment of the disease must occur and operate quite effectively; otherwise, it is not easy to explain the escape of so many of those early infected from the more untoward consequences of bacterial invasion. These defenses, whether natural or acquired, have been sought with great concern by investigators; for an understanding of them might lead to a more successful attack on the tuberculosis problem. Following Metch-

nikoff's epoch-making discovery of phagocytosis as a protective device of the body, attention was directed to the rôle of the leukocytes in the combat against tuberculosis. However, recent writers in THE JOURNAL [1] have not hesitated to state that, in the light of the latest evidence, "the lymphocyte has outlived its day of importance."

It cannot be denied that the vascular endothelium may play a part in the resistance of the body tissues to tuberculosis. Precisely how significant this function, the importance of which has recently been emphasized by several investigators,[2] may be remains to be ascertained. In addition to such cellular types of immunity, attention has also been directed to so-called "humoral" means of defense which are usually represented by characteristic antibody formation. The outlook in this direction likewise has not been very encouraging. Specific bactericidal products comparable with the immune substances developed in many other forms of infection have not yet been demonstrated to attain any striking importance in the development of resistance. Hence both the humoral and the cellular mechanisms of resistance "leave much to be explained."

Recently, however, Corper [3] and his associates in the Research Department of the National Jewish Hospital for Consumptives, at Denver, have directed attention to a purely chemical factor that may be active in the determination of the individual resistance to tuberculosis. They have observed that 3 per cent. of carbon dioxid causes some inhibition of the growth of the tubercle bacillus in the test tube, and that 15 per cent. is tuberculocidal. Tubercle bacilli will not grow in a carbon dioxid-free atmosphere. Cultures of tubercle bacilli buried in the tissues of animals and permitted to acquire the carbon dioxid concentration of the body are definitely inhibited in their growth, while other cultures similarly buried, except that ingress of atmospheric air is permitted, show no inhibition. When viable tubercle bacilli are placed in a closed system, their growth becomes inhibited as the carbon dioxid which the organisms elaborate approaches a concentration of approximately 5.5 per cent., at which concentration respiration of these micro-organisms is also reduced to a minimum. In a closed system the end-products of metabolism automatically inhibit the growth of the organisms that give rise to them.

As a concentration of carbon dioxid, namely, 5.5 per cent., sufficient to inhibit the growth of the tubercle bacillus definitely may occur under normal conditions in the body, it is perhaps not too visionary to assume that this product of metabolism may be of no little importance in relation to tuberculosis. It has been said [4] that this finding reopens the consideration of the influence of fatigue, exhaustion, exposure, metabolic diseases, etc., as probable etiologic factors in the causation of tuberculosis in view of their ability to alter the carbon dioxid content of the body. Experience warns us against undue enthusiasm or false steps in a field in which so many hopes of scientific progress have been shattered in the past generation. Nevertheless, all new findings, as those gained by Corper, deserve a respectful consideration.

Physicians often express wonder that the students of chemotherapy have not yet discovered a way to attack the tubercle bacillus by the use of pharmaceutic chemicals. The analogy of the spirochetes, trypanosomes and malarial parasites, on which comparisons are so often based, is somewhat misleading. Wells [4] has pointed out that the remoteness of the tubercle bacillus from the circulating blood stream, the avascularity of the tubercle, and the immediate juxtaposition of necrotic cells stand in the way of direct chemical attack. The introduction of potent drugs to places difficult of access in the tissues represents an undertaking to tax the intelligence and resourcefulness of more than one student of tuberculosis in the near future.[5]

1. Corper, H. J.; Gauss, Harry, and Rensch, O. B.: Resistance to Tuberculosis, J. A. M. A. **76**: 1216 (April 30) 1921.
2. Foot, N. C.: J. M. Res. **40**: 353 (Sept.) 1919; J. Exper. Med. **33**: 513, 533 (Nov.) 1920; **33**: 271 (Feb.) 1921. Permar, H. H.: J. M. Res. **42**: 9 (Sept.) 1920. Karsner, H. T., and Swanbeck, C. E.: Ibid. **42**: 91 (July-Sept.) 1920.
3. Corper, H. J.; Gauss, Harry, and Rensch, O. B.: Studies on the Influence of Carbon Dioxide on Resistance to Tuberculosis, the Effect of Carbon Dioxide on the Tubercle Bacillus, Am. Rev. Tuberc. **5**: 562 (Sept.) 1921.
4. Wells, H. G.: Interstate M. J. **21**: 221, 1914.
5. Gauss, Harry: The Chemotherapy of Tuberculosis, Colorado Med. **18**: 79 (April) 1921.
6. Emerson, W. R. P.: Nutrition and Growth in Children, New York, D. Appleton & Co., 1922, p. 80.
7. Fisher, Irving, and Fisk, E. L.: How to Live, Ed. 15, New York, Funk and Wagnalls, 1919, p. 370.

DOES FATIGUE CONTRIBUTE TO SUSCEPTIBILITY TO DISEASE?

During the late war, considerable study was devoted to the factors contributing to bodily fatigue, because this condition results in decreased efficiency. Whatever the attitude may be toward laxity of effort in the every-day life of peace times, it becomes a matter of public concern that there shall be no human slackers in periods of national peril. Recently a distinction has been proposed between the "fatigue that is a natural result of exertion, from which there is quick recovery, and overfatigue," which makes the return to health more difficult. This habitual overfatigue has of late been held responsible in particular for much of the malnutrition of children.[6] Fatigue is also charged with rendering the body more susceptible to infection. Thus, a popular treatise on personal hygiene states conspicuously and with apparent assurance that "avoiding undue fatigue will help greatly in preventing colds." [7]

One of the functions of experimental science is to ascertain whether our personal prejudices and theoretical dogmas square with the evidence furnished by rigorous test and unrelenting critical analysis. It tends to impede rather than facilitate progress in any

field of human endeavor, whether it be in social welfare or hygienic prophylaxis, to preach unwarranted doctrines. Hence the observations of Oppenheimer and Spaeth [8] at the School of Hygiene and Public Health at Johns Hopkins University, bearing on the popular medical belief that a fatigued individual is more susceptible to disease than is one not fatigued, are worthy of mention. In their studies of rats the Baltimore investigators found that fatigue, by which was meant a condition of temporary exhaustion produced by excessive muscular exertion, did not markedly alter the susceptibility of these animals to toxins or infectious agents. If anything, there was a slight tendency to increased resistance to tetanus toxin given to fatigued rats; and they also showed a greater resistance to experimental infection with pneumococci.

It goes without saying that a few tests of this sort do not warrant any extravagant statement on the possible interrelations of fatigue or overfatigue and susceptibility to disease.[9] They do warn, however, against the practical exploitation of theories that are far from being demonstrated. Progress is never well served by insistence on what we hope or wish, rather than what we know to be true.

Current Comment

SOME MODES OF TRANSMISSION OF TULAREMIA

In a recent editorial, attention was directed to the specific infectious disease to which Francis of the U. S. Public Health Service has given the name tularemia. Subsequent reports by Francis and Lake [10] add further interesting chapters to the possibilities of transmission which form a necessarily important consideration in the study of the problems of any disease of infectious character. It is now proved that the common bedbug, *Cimex lectularius*, is capable of transmitting tularemia from an infected to a healthy white mouse. The offending micro-organism, *Bacterium tularense*, suffers no apparent diminution of virulence by reason of long residence in bedbugs. For example, the feces of insects infested four months previously proved fatal to experimentally inoculated animals. Such facts serve to indicate the possibilities of keeping alive the agencies of infection over long periods of time, not only through the presence of infected rodents, but also through the survival in blood-sucking insects. This is further substantiated by the new demonstration that the mouse louse (*Polyplax serratus*) and likewise blood-sucking mites of the species *Liponyssus isabellinus* removed from an infected white mouse may act as a potent infection carrier.[11] Thus, the evident persistence of *Bacterium tularense* in a considerable variety of parasitic hosts lends a somewhat unusual danger to the infective micro-organism by giving to it chances of survival shared by comparatively few of its competitors among the bacterial enemies of man.

A PIONEER EXPONENT OF SPECIFICNESS IN INFECTION AND IMMUNITY

There exists for every infection a specific germ, but it can produce disease only in animals which have specific receptors for it. The lack of receptors accounts for natural immunity. The acquired immunity is of the same athreptic nature resulting from exhaustion of the specific receptors.

The first two of these sentences would not be out of place in a modern textbook. The last phrase, which is not quite up to date, would arouse the suspicion that the author had been asleep for thirty years. The author, however, has been sleeping for 200 years, and the theory given is merely a translation of the words of Thomas Fuller into our modern nomenclature. Recently Dr. Ludvig Hektoen [12] has presented a study of Fuller (1654-1734), his interest in this almost unknown English practitioner having been stimulated on reading:

> The pestilence can never breed the Small-Pox, nor the Small-Pox the Measles, nor they the Crystals or Chicken-Pox, any more than a Hen can breed a Duck, a Wolf a Sheep, or a Thistle Figs; and consequently, one Sort cannot be the Preservation against any other Sort.

The study of Fuller's work revealed other extremely interesting notions. He did not know the term immunity, and instead of receptors he spoke of receptacles or more often of different inborn ovula (or: "something equivalent to ovula"), which can be impregnated by the venoms of the different diseases, so that a more exact translation would be: cells with specific receptors. There is no difference, save in terminology, between his views and those which inaugurated the new era of bacteriology and immunology in the last century. His theory about the ovula serves to remind us of Claude Bernard's postulate of a physiologic basis of the exanthems, a problem that remains as yet unsolved. The famous lock and key simile is anticipated surprisingly well by Fuller:

> When they (i. e., the venomous effluvia) cluster together, they turn into such Composite, as the Pores and Receptacles of our bodies are fit to receive into them; *even as a Mortice is fitted to a Tennant.* Hence may some Reason be excogitated, why particular Animals are affected by peculiar poisons.

The ideas of Thomas Fuller were not fully appreciated—in his own time or afterward—but they returned. Even Fuller had his predecessors, but none of them, so far as we know, comes so near to our modern conceptions of immunity. To the observation and speculation of long ago, the last century added methods of investigation and securing relatively exact facts. The history of medicine makes us proud of the progress achieved in our times, but the clear insight of many

8. Oppenheimer, Ella H., and Spaeth, R. A.: The Relation Between Fatigue and the Susceptibility of Rats Toward a Toxin and Infection, Am. J. Hyg. **2**:51 (Jan.) 1922.

9. Other negative evidence is given by Abbott, A. C., and Gildersleeve, N.: The Influence of Muscular Fatigue and of Alcohol upon Certain of the Normal Defenses, Univ. Pennsylvania M. Bull. **23**:169, 1910.

10. Francis, Edward, and Lake, G. C.: Tularaemia Francis 1921, IV, Transmission of Tularaemia by the Bedbug, Cimex Lectularius, Pub. Health Rep. **37**:83 (Jan. 20) 1922.

11. Francis, Edward, and Lake, G. C.: Tularaemia Francis 1921, V, Transmission of Tularaemia by the Mouse Louse Polyplax Serratus (Burm.), Pub. Health Rep. **37**:96 (Jan. 20) 1922.

12. Hektoen, Ludvig: Thomas Fuller, Country Physician and Pioneer Exponent of Specificness in Infection and Immunity, Bull. Soc. Hist. of Med., Chicago, 1921.

old authors warns us that while we may be accumulating facts that will remain, we are doing it on the basis of old ideas that return. Facts remain, but ideas return.

SMALLPOX IN THE UNITED STATES

Since the beginning of the annual compilations in 1900, the highest death rate from smallpox in the registration area was 6.6 per hundred thousand population in 1902. In 1904 the rate was 2.1, and since that time it has never reached 1.0 per hundred thousand population. The Bureau of the Census has just issued its report of the deaths from smallpox in the registration area for the period from 1916 to 1920. From time to time, outbreaks of smallpox occur in small sections of the population, indicating that the danger of smallpox in an unvaccinated group of persons must not be overlooked. The epidemic at Poteau, Okla., described in this issue, is a typical example. Another example of the same type is the general death rate in Louisiana. In 1920, there were 167 deaths from smallpox in that state, and the rate was 9.2, contrasted with a rate of 9.8 in 1919 and of 1.0 in 1918. In this connection, it is interesting to compare the colored with the white rate for Louisiana. The colored rate for 1920 was 15.4, as compared with 5.3 for the white race, and the colored rate for 1919 was 21.2, as compared with 2.4 for the white race. Normally, the rates for the two races in Louisiana are approximately the same, i. e., averaging 2.0 for 1916, 1917 and 1918.

VACCINATION AGAIN DEMONSTRATED AN EFFICIENT PROTECTION

For many years, as pointed out by the Bureau of the Census in a recent report, such outbreaks of smallpox as have occurred in this country have been limited to small sections of the population. Typical of such local outbreaks was an epidemic at Poteau, Okla.,[1] in December, 1921. December 5, a prisoner in the county jail at Poteau was taken sick. He had been in Kansas City, Mo., from November 16 to 27, during which time an epidemic of smallpox of a virulent type was present in that city. This man had been vaccinated forty-four years previously, but not since. The case was reported to the city health officer, December 18, thirteen days after the man was taken sick. In the meantime he had been in contact with thirty other prisoners and with the county officials. December 19, some of the other prisoners, *who desired it* (italics ours), were vaccinated, and from Dec. 21, 1921, to Jan. 5, 1922, eighteen cases appeared among the other prisoners. Although the original patient recovered, nine of the prisoners in whom the disease developed died during the period January 3 to 13. Every prisoner in the jail who had not been vaccinated contracted the disease. Ten prisoners who had been successfully vaccinated within the three preceding years in the army did not contract the disease, although they had been in intimate contact with virulent cases. January 5, five prisoners broke jail and were not apprehended. One was reported to have died in Alabama. In addition to the eighteen cases occurring in the jail, nineteen cases occurred in the general community, fourteen in Poteau and five elsewhere in the county. Of the fourteen smallpox patients in Poteau, twelve died during the period January 1 to 18, and, of the five outside Poteau, three died. There resulted, therefore, from the original source of infection at the county jail, thirty-eight cases with twenty-four deaths. The state health commissioner assumed charge of the epidemic, January 15, and immediately instituted control measures. All persons who refused to be vaccinated were placed under quarantine, and all the small towns in the vicinity of Poteau were quarantined against that city. The epidemic has now subsided. The effects of this epidemic again emphasize what has been known for more than a hundred years—that smallpox is a preventable disease, and that vaccination protects efficiently.

1. Account of Smallpox Outbreak at Poteau, Oklahoma, Pub. Health Rep. 37:486 (March 3) 1922.

LAY WRITERS ON SCIENTIFIC MEDICINE

From time to time lay writers erupt in the popular magazines with sensational discussions of medical subjects on which they are usually none too well informed. The appearance of such essays is invariably followed by the receipt at this office of protests from physicians who feel that THE JOURNAL should expose such misrepresentations of medical science. As one correspondent expresses it:

> I feel that this conglomerate mass of alleged logic is a direct insult to every physician, and that a just criticism in the name of the profession as a whole should be laid before the editor of this magazine.

In this particular instance, the article referred to is entitled "Overcoming the Objection to Being Human," its author being one Fred C. Kelly, and its place of publication the current issue of the *Cosmopolitan*. The editor of the magazine very well characterizes Mr. Kelly's scientific importance in his introductory note: "Fred C. Kelly," he says, "is a writer who is not afraid to add two and two together and get five—if he thinks five is the proper answer." Mr. Kelly's article contains much that is true with unscientific interpretation, and a little that is untrue and therefore not susceptible of scientific interpretation. The article is featured by an illustration, under which is the caption: "When the medical profession hit on the germ theory it was only natural to give germs credit for a host of ills." A safe rule for either a scientific physician or a trusting layman to follow would be: As soon as an author discusses germs and their causation of disease as a theory, he exhibits his ignorance of scientific medicine.

THE APOTHEOSIS OF THE OFFICE GIRL

One of the recent developments in the business side of medical practice is the so-called "editorial secretary," or, as she sometimes signs herself, "Secretary to Dr. Smith." The idea is splendid. It carries to the recipient of letters, so signed, the suggestion that the doctor is so busy with his practice and that he is such a prolific and important contributor to medical literature that he has not sufficient time to dictate a letter

or to go over his manuscripts when he submits them for publication. The editor receiving such a contribution must naturally wonder whether the doctor actually had time to write it. Certainly, this innovation is an improvement on that old rubber stamp, "Dictated, but not read."

Association News

ANNUAL CONGRESS ON MEDICAL EDUCATION, LICENSURE, PUBLIC HEALTH AND HOSPITALS

(Continued from page 822)

ORGANIZATION OF THE PUBLIC FOR COOPERATION WITH THE MEDICAL PROFESSION

THURSDAY, MARCH 9—MORNING

The Medical Profession and the Public

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich.: There has never been a time when the laity, both individually and collectively, has been so appreciative of the medical profession and of its work as at present. Wealthy persons are giving money in large sums to the medical schools, to medical research institutions and to special medical investigations, such as those connected with tuberculosis and cancer. Congress is apparently willing to vote millions on a fifty to fifty proposition to aid states in taking care of the physical needs of the people. There seems to be no limit to the sums demanded for the ex-soldier, both the physically disabled and those in sound health. State legislatures are supporting their medical schools with a liberality hitherto unknown. In a spirit of great generosity they are caring for the physical needs of the unfortunate of every class. State boards of health are receiving liberal appropriations and are being given wide authority.

The Council believes it is of prime importance that the public in general should be instructed in all matters of both preventive and curative medicine which are not strictly technical and professional. In its most modest form, this instruction should be given in the primary grades of the public schools and should continue, with such enlargements and modifications as the intellectual advancement of the child may indicate, through the secondary schools and into the universities. Long ago a wise German said: "Permit me to educate two generations, and I will change the world." Teach the child what it is able to comprehend concerning the nature and transmission of communicable diseases, making more specific and particular this instruction as the child advances intellectually, and within a few generations there will not be enough ignorant of these matters to keep alive any superstitious or unscientific cult. The Council has been so sure of the wisdom of this procedure that it has drafted a model bill for introduction into the legislature of states which do not already provide for such instruction.

Along the line of information to the public, the Council has urged the Board of Trustees to publish for the laity a journal which should not only cover sanitation and epidemiology, but should also include discussions on health and diseases in all their aspects, as far as the layman can understand. The time has come when the medical profession, having demonstrated its usefulness to the public so fully and so convincingly, can no longer stand apart from intelligent laymen, but must combine with them and act together. The Council believes that such a journal will be an investment which will bring a large return and carry the medical profession a long way toward its goal.

Much is being said, both inside and outside the medical profession, about "state medicine." Already medicine is largely regulated and controlled by the state. The state boards of medical licensure fix the requirements for admission to medical schools, have authority to pass upon the curriculum, determine what schools are, in their opinion, reputable, admit to their examinations graduates of only those schools of which they approve, and finally, test by examination every individual who applies to the board for a license. In all state university medical schools the education of medical students, as well as of those in all other departments, is provided by the state. The state determines the fitness of every individual who desires to practice medicine within its boundaries. To this extent, medicine is already under state control.

I am thoroughly convinced that the greatest need in our endeavors to carry the benefits of scientific medicine to all our citizens lies in lack of facilities within the reach of most physicians to practice scientific medicine.

The following are basic facts, a recognition of which is essential in any move to carry the benefits of scientific medicine to all the people:

1. Every legally qualified physician in the United States should, so far as possible, have at his service every scientific facility essential to make a correct diagnosis and to provide the best possible treatment, medical or surgical, as the case may be, for his patient.

2. He needs a hospital properly equipped with chemical, bacteriologic, roentgen-ray, and other facilities. He also needs this hospital where he can treat his emergency and other serious cases with everything at hand which he may need.

After having studied this matter for quite two years, your Council has, individually and collectively, come to the conclusion that the community hospital, as provided for in the Iowa law, should be encouraged.

Lessons of the Past

DR. FREDERICK R. GREEN, Chicago: The development of our health laws and health enforcement machinery has been mainly inspired and promoted by physicians. Physicians are not a body of supermen or of superlatively wise advisers. We are simply a body of men with special training, experience and qualifications in the knowledge of the causes and the methods of preventing human diseases, and in their diagnosis and treatment.

The protection of the public against disease is a public and not a professional function. The enactment and enforcement of health laws are functions of the state, just as are the enactment and enforcement of laws for the protection of property. When we attempt to draft laws, we generally fail. Whenever an attempt is made to assume functions for which we are not trained and to perform activities for which we are not fitted, we confuse our attitude to the public, and misunderstanding and confusion result.

No effective cooperation can possibly take place between two groups until the functions and relative responsibilities of each are clearly defined and understood. We must agree on a definite policy and must clearly define our own functions before we ask the public to cooperate with us. It is the duty of physicians to furnish facts. It is the duty of the people and the legislatures to make the decisions. In those few cases in which the personal rights or privileges of physicians are involved, we should take a frank and open stand for the protection of our own interests without subterfuge or concealment.

The situation today may be thus summarized: 1. The prevailing system of separate independent health organizations is not leading to any effective organization of the public for health work. 2. There is no prospect that this method will ever result in the effective organization of the public on account of the comparatively small number of people interested in each organization and the impossibility of uniting these organizations into a common body. 3. The various organizations in the field have not common plans of campaign, and consequently operation is very expensive, resulting in duplication of officers and equipment, with decreased efficiency. 4. The multiplication of organizations and the constant appeals to the public being made by each body are confusing and irritating, rather than educating the public. Witness the number of tag days and drives that have become a nuisance in most of our cities. 5. The competition between these organizations results in the promotion of half-baked and ill-considered public health policies, or of sensational schemes to catch public attention. 6. The separate organizations are each so absorbed in promoting and administering their own

organization that no time, energy or money is available for investigation or for the development of a unified public health program.

Summing up the present situation, the following propositions may be assumed: 1. The present organization situation in the public health field is not satisfactory or effective. 2. The public health movement is rapidly passing out of the propaganda stage and is entering a period in which constructive effort should predominate. 3. The public health movement can no longer be confined to one class or profession. 4. The public health movement has passed the charitable and philanthropic stage. Any plans for the future must consider health as a public function and must include the entire public, not as beneficiaries, but as participants.

If these assumptions are sound, then there are two tasks that must be accomplished if the medical profession wishes to maintain its leadership. These are, first, our medical organizations must be made effective working machines instead of paper organizations, and second, there must be devised some plan by which the public can be effectively organized as allies of the medical profession.

Protecting the Public Health by Legislation

DR. HOLMAN TAYLOR, Fort Worth, Texas: The state medical association must continue in operation its legislative machinery. It must see to it, as heretofore, that legislators are elected who are at least fair-minded, intelligent and to the greatest extent possible informed on the medical problems likely to be legislated upon. It is not necessary or even best that these gentlemen be unequivocably pledged to the ideas of the medical profession. Such a demand as that lays the predicate for the subsequent charge by those who are not basically in sympathy with our contentions, that legislation by coercion is being practiced. While it is a fact that legislation by coercion is the accepted procedure, and while it appears that it is apparently the only successful way of securing laws on controversial subjects, at the same time the charge does not sound good, and it is wrong to secure the passage of laws in any such manner. The important thing is to establish ourselves in the estimation of the prospective legislature as worthy of credence and as informed on the subjects involved, and as actuated by broad-minded and unselfish interest in the public welfare.

The medical profession, collectively and individually, must be informed and thoroughly educated on the whole problem of medical and public health legislation, and on the individual subproblems likely to be considered in the near future.

The lay public must in a like manner, if through more devious ways, be educated with regard to the medical and public health requirements of the present and the possibilities of the future.

It occurs to me that the most feasible plan is to unite those members of county medical societies who are willing to study the problems of medical legislation with that portion of the lay public which is at the same time intelligent and level-headed, and which may be induced through a consideration of the seriousness of the situation to give the time and study necessary to get results. In the formation of organizations of this character, it would seem wise to retain for the medical profession effective, if advisory, control over the type of individuals to be included.

DISCUSSION

DR. ALEXANDER C. ABBOTT, Philadelphia: For the last few years, the statement has been made more and more frequently that, if the medical profession does not take the leadership in this movement, the layman is going to do so. I have been impressed by the argument that the medical profession has before it an obligation as an advisory body; that, so far as legislation is concerned, it can best be left in the hands of an educated public, and we are rapidly getting an educated public. Our attitude to the public should be: Here is what we believe to be the best course to pursue for your good. If an educated public will get busy, aside from any professional interference, and go to the legislatures, and say we are convinced that the information given to us on this subject is sound and to the best interests of the community at large, and we want favorable legislation, the result will be that appropriations infinitely larger will be placed in the hands of those exacting that legislation than would otherwise be the case.

DR. CHARLES E. HUMISTON, Chicago: I am impressed with one thing which has been mentioned in this discussion so far, that the medical profession and its representatives on the scientific side have developed remarkably in the last fifty years. Our knowledge of disease is comprehensive. With my knowledge and study of the modus operandi of the enactment of medical laws and of politicians and the personnel of the legislature, I should say that the medical profession is just beginning to understand its problems. We are too optimistic altogether. The education of the public is slow of accomplishment. Public opinion has not changed much fundamentally since the days of Pericles. Medical science, however, has advanced by leaps and bounds in the last fifty years, but human nature has not changed. To expect the public to rise to an emergency is to expect something that will not come to pass. The ordinary member of our law-making body is concerned largely with holding his job, and if we overlook that point we overlook something that is effective. We must influence legislation through the education of the public, and our work must be more effective than simply expressions of the advisability of doing this thing or that thing. I am in favor of certain measures of coercion; I am not at all in favor of leaving the general public to suffer until the general public is aroused. I would be sorry to see outside associations aroused to the necessity of organization for something the American Medical Association can do. We can do it best, and let us get together and devise means and conduct an active campaign of education which will be effective and can be applied to the individual in the law-making body.

DR. GEORGE W. SWIFT, Seattle: We feel that the poorest doctor of medicine is better than the best quack that comes to the state of Washington. We are generous with the cults. We have laws for every type of cult that exists. We organized the Washington Public Health League within the profession, selecting men who are leaders in our profession. We organized for the purpose of finding out where we were. We organized this league so that we could go to the public if we had to. Election came on and labor lost, and if labor had not lost we should have lost. Every small hospital in the state is going to be standardized, and a movement is on foot for that purpose. We are going to train physicians on time; we are going to get them into the county societies, and have them practice honest medicine. There is no argument about "state medicine." There is no argument about the cults. They will die a natural death because they cannot deliver the goods.

DR. JOHN A. FERRELL, New York: I had occasion about a year ago to visit three hospitals in Iowa, and I was very favorably impressed by the work they were doing and with the interest the taxpayers have shown in providing funds necessary for their maintenance. These hospitals will be instrumental in providing better facilities for the people of the rural communities and avoid the necessity of those in favorable financial circumstances to go to distant cities for the right kind of medical education. The average age of physicians in the rural communities has been steadily climbing, until now it has passed the meridian. These rural communities, in addition to providing better clinical facilities, will serve as a basis from which may radiate activities directed toward the conservation of the health of the people.

REV. CHARLES B. MOULINIER, Milwaukee: There has been aroused in the faculties of medical schools a divine discontent which is urging them to better teaching, and that is the basis of better scientific medicine. The movement for better hospitals is strong all over the country. In these two movements there is a better heart and a better conscience of the medical profession. In view of what medical knowledge has developed in the last ten or twenty years, and in view of the serious obligation that the medical profession has, we are appreciating it more keenly today than ever before.

DR. JOHN J. MULLOWNEY, Nashville, Tenn.: We have today in this country no less than twelve million negroes. Where are the colored graduates to get their training as interns so that they may become more efficient medical men? I was engaged in public health work for four years in the state of

Pennsylvania under Dr. Samuel Dixon. We cannot have efficient public health if we neglect four tenths of the population and not give them well trained public officials and well trained sanitarians and medical men.

Dr. Rachelle S. Yarros, Chicago: I am going to make a plea for the public. The public is far more ready to listen to the legitimate medical profession than the medical profession in its pessimistic moments seems to feel. The public is being educated, and the physicians are educating it. In our medical schools we are taught to deal with our patients, and our students are not taught yet to deal with communities.

Dr. H. E. Dearholt, Milwaukee: The question resolves itself into this: The public and the medical profession should take this leadership from those who are not best calculated to assume it.

Dr. C. A. Harper, Madison, Wis.: I have watched the medical profession pretty closely for twenty-five years, and its attitude toward medical legislation and health legislation for eighteen years, and yet it has been an extremely difficult problem to get any united cooperation on either medical legislation or health legislation. We must not hope to accomplish much if it is going to take fifty years to educate the people as it has taken fifty years to educate the medical men to this appreciation. I believe that the medical profession must get together and have a little more consideration one for the other, to take the powder away from the enemy. I do not believe that the medical profession should simply say: Here we have the knowledge; if you want it, call on us. If you do not want it, go your way. I do not believe that that will ever solve the problem. The medical profession, having the knowledge, should go to work and apply it to members of the legislature and to the people as a whole.

Dr. Samuel W. Welch, Montgomery, Ala.: My distinguished predecessor in 1873 thought out and planned a medical organization which I do not believe has been equaled by any other state in the Union. The medical society assumed the leadership of medical and public health thought in Alabama at that time. Our medical organization, through its leaders, provided the quarantine laws of the state, and I am happy to say that much of the virtue of these quarantine laws came from the advice of the distinguished chairman (Dr. Vaughan) of this organization. In establishing the health unit in Alabama, which consists of a minimum personnel of three (we recommend four), the first step taken in the organization of a unit is for the state health officer to get in touch with the medical society of that county through its board of censors. The board of censors gets in touch with all civic organizations of that county, and then with the backing of the citizenship of that county we go before the appropriating bodies and demand an appropriation. With that backing, with the medical profession as leaders of thought and the public backing the movement, we seldom fail in obtaining an appropriation commensurate with the needs of our health organization.

Thursday, March 9—Afternoon

Public Health from a Layman's Standpoint

Mr. Walter A. Jessup, Iowa City: Iowa has maintained an aggressive board of health; a college of medicine; an extension service in public health education in the university; statewide laws favorable to the care of the indigent sick, who are provided an opportunity for being transported to the university hospital at public expense, and epidemiologic laboratories including provisions for bacteriologic service. The state board of health has assumed full responsibility for the enforcement of all statutory regulations, the gathering of vital statistics, etc., in its own specific organization located in the capitol. The scientific epidemiologic and bacteriologic service is provided at the university in connection with the college of medicine. The state-wide remedial service for indigents, with the exception of the venereal patients, has been handled primarily through the county units, dealing directly with the university hospital. The state has come to rely heavily on the university for the dissemination of health information through the organized extension service. Highly developed research work in the field of infant welfare has been located in the child welfare research station at the university. Thus, it may be said that the state of Iowa has come to more or less sharply differentiate responsibility in the field of public health so as to provide for the administration of public health legislation by the state board of health. The educational, scientific and service ends of public health have come to be provided at the university.

Iowa has placed every program having to do with the administration of health legislation at the capitol under the state board of health along with the regulations having to do with agriculture, banking, national guard and other state functions. The state has enacted also very favorable legislation for the erection and maintenance of county hospitals through the control of county boards of supervisors. A number of counties have already taken advantage of this law, and others will follow. Quite naturally, the more spectacular needs of the community have been emphasized first so that in a few cases these hospitals have been directed almost wholly to the care of tuberculous patients. The law is so drawn, however, as to make it favorable to operate first-class open hospitals with freedom to care for private as well as public patients. These hospitals have been successful in the degree that the leadership has been aggressive and intelligent. The scope of these hospitals will vary on the basis not only of leadership and community interest but also in proportion to the density of population. In counties having a small population, it will be impossible to provide as wide a range of service as in the more populous centers.

Organizing the Public with Physicians as Leaders

Dr. F. E. Sampson, Creston, Iowa: If the medical profession is to lead the public, and it should in certain lines, we must have leaders. Not that there is a dearth of physicians who are willing to lead, but most of us insist on being generals. What we need is a generation of good soldiers, good corporals and sergeants, community engineering squad leaders; men who, instead of sticking around the training camps and scheming to get a shavetail commission on the headquarters staff, will go into the field and do the work that needs to be done instead of leaving it to nondescript doctoroids from the cult mills.

The propositions which I shall endeavor to substantiate are that: 1. Neither the public nor the medical profession is languishing for lack of organizations suitable to meeting all present needs for intelligent cooperation between the public and the profession. 2. The initiative is clearly for the medical organizations and the institutions concerned with preparation of men and women for the practice of medicine. 3. Essentially prerequisite to our undertaking to organize and lead the multitude is that we activate and develop sustained functioning efficiency of our own state and county medical societies. 4. Competent leadership of our own organizations includes participation in and leadership of lay activities so far as such is conducive to better distribution and delivery of standard medical service. 5. More calamitous to the cause of scientific medicine than invasion by any cult is a medical school that saturates the student with scientific detail to the exclusion of cultivating creative ideals and constructive social attitudes. 6. One of the most urgent needs is for established intelligent working relations between the medical schools and the field of medical practice. 7. Full-time, competent executive secretaries for our state medical societies and development of field activities, in sustained cooperation with lay activities and with state institutions and departments, offers the most promising solution for our most urgent medical problems. 8. Finally, any plans or program worth while will take a long while to put over and require the exercise of patient perseverance and all the virtues that inspire men and women to keep on keeping on.

The great need is for distribution of service. The solution of these problems lies in medical leadership that will lead practitioners to work together where they are, and then to coordinate their own local group with other local forces, to inspire as well as to instruct the medical student; to cultivate his social sense as well as scientific skill. Let us remember that leadership which snatches laurels within the season is open to suspicion. Even so great a leader as the famous sanitarian Moses had no end of bother in organizing and

leading the multitude; and even with the assistance of frequent interventions of Jehovah to help through in the pinches, it took him forty years to even get a glimpse of his destination.

Organizing Our State Societies for the Protection of Public Health

DR. J. H. J. UPHAM, Columbus, Ohio: The task of protecting the public health is essentially the duty of the state, and the maximum results may be expected when its trained agencies, guided by and working with the organized medical profession, systematically attack the problem.

I believe that the best way to organize our state societies for the protection of the public health is not to initiate health propaganda, as has been done in the past—that has served its purpose in arousing the very wide interest apparent in recent years—nor to foster or organize more private health bodies, that will merely duplicate work and waste effort, but rather to concentrate our efforts on the activities of the state health service; to make a firm contact and endeavor with it to formulate a policy which shall define the character and scope of the state program, such as to insure the hearty cooperation of the medical profession.

In Ohio we believe that we have established a working solution of the problem for the present, a modus vivendi, as it were. The problem is not a fixed one, and doubtless different conditions will arise and readjustments will be necessary from time to time. In the present and in the future, the recognition of certain fundamental principles involved will be of great assistance in bringing about a satisfactory settlement.

The first is the necessity of the proper recognition by the members of the medical profession and the public of their reciprocal individual and collective obligations.

The second principle, a very important one, is a sympathetic comprehension on the part of the state health officials of the problems of medical practice as well as those of the public health service. This is their obligation to the medical profession. Occasionally one meets a health official who seems to have forgotten the origin of his service; who seems to feel that state sanitation has sprung "full panoplied from the brow of Jove," rather than the evolved product of medical practice that it really is. One such individual, perhaps otherwise very efficient, can do more harm to harmonious health work in a state and more to disorganize systematic public health activities than can be overcome in a long time. We believe ourselves very fortunate in Ohio in having had in the past, and particularly at the present, a health service, the officials of which are keenly alive to the importance of these phases as well as skilled in the technical side of their work.

The third principle is the necessity of having a common meeting ground of understanding of all parties concerned, and it is the lack of this that is causing most of the trouble today. I believe that in all the states a large majority of the members of our profession appreciate and recognize the responsibilities and obligations of the medical profession, just as most of the health officials earnestly and honestly desire to cooperate with the medical profession and to respect the rights and privileges of its members; but unless there is this common meeting ground, a mutual merging of interests and recognition by all of the reciprocal obligations, there arise misunderstandings and cross purposes.

We feel that we have established this in Ohio by the adoption of a policy by our state health commissioner as the result of conferences with our Committee on Public Policy and Legislation, which indicates the position of our state officials as to "the proper activities of the state in medicine"; and so far this has met with hearty cooperation and approval from our association members.

Our state association endeavors to keep in touch with the various private health organizations, many of our members participating unofficially in their activities; but we feel that the regular systematic work carried out by the state agencies, according to the policy expressed above, with the hearty cooperation of our members, will be very effectual and render the maximum results.

Periodic Health Examinations the Physician's Opportunity and Obligation

DR. HAVEN EMERSON, New York: To supplement what Dr. Upham has said, I should like to call attention to modern health efforts and how we have now reached the point at which we need the entire cooperation of the individual. The state health department, like the national department of health, began by doing things for the community; that is, it protected the people of the community against certain obvious risks of insanitation; it provided them with a pure water supply and a clean milk supply. After that their function was largely doing things for the people individually. They gave them vaccination; they provided them with diagnostic services; they did various other things of that kind which the public should do for themselves, and if you will run over with me briefly the activities which consist essentially of diagnostic services in the interest of preventive medicine, you will see how far ahead this part of medical practice has gone in the interest of the public.

At present the leading institutions follow their maternity cases with a certain amount of supervision through five or six months before confinement. This is done rarely except among specialists in obstetrics because of the economic limitations of the people and the unwillingness of the physician for what he is paid to give the amount of service necessary to protect the mothers in the prenatal period. Out of a group of 10,000 mothers watched through the prenatal period, occasionally by private agencies, through the services of physicians and assistant nurses, the death rate among mothers has dropped 50 per cent. as compared to the pregnancies as a whole, and among these 10,000 cases the number of stillbirths dropped to about one half of what it formerly was in cities. Also, there has been a decided drop in infant mortality. That has been accomplished by periodic medical examinations and the supervision of the pregnant mothers. About one third of all babies born in the city are subjected to some kind of supervision for the first two or three years of their lives, with the result that the death rate is down to 71 per cent., as compared with a much higher death rate formerly. This constitutes the first type of periodic examinations for the expectant mother, which is carried out once a month from the fifth or sixth month on.

Before children can go into an industry in many cities they have to undergo an examination at the age of 14 or 16 before they can undertake the hazard of self-support. Every employer of labor knows that if he is going to get competent labor and protect the labor he has, he has to provide an examination at the time of employment, and preferably an annual examination thereafter to see that those who are in his employ are not becoming liabilities to him and are not becoming sickened and unnecessarily prematurely aged or diseased by the process of their work.

In the thirty-one tuberculosis clinics in New York in the last fifteen years, one million people have been examined. Sixty-six per cent. of the people in the year 1921 who went through these examinations were found to be nontuberculous. The percentage has arisen from 20 per cent. to 66 per cent., a million of the population having passed through this examination sieve. At present we have as many patients under observation in our special cardiac clinics as we have tuberculous patients. We are already developing an increasing number who come to find out whether or not they have heart disease, and not how they may be cared for when they have cardiac disease. There are stations in the cities and rural communities for the examination of the mental capacity of persons of different ages. There has been set up by the Academy of Medicine in New York a series of examining stations. These stations are not clinics; they are not dispensaries in connection with hospitals; they have no facilities for the treatment of disease, but are places where physicians on a salary examine people who are presumably healthy. These people realize that by consulting physicians they can recognize the evidence of sickness long before the nonmedical person can do so.

DISCUSSION

MR. W. B. OWEN, President, Chicago Normal College; Member of Committee on Health, National Educational Association, Chicago: I find that physicians really have as much difficulty in determining what they are going to do in

medicine as we have in trying to do things in education. Elementary education is being made over at a tremendous rate. The whole aims and purposes of our public school work are being made over, reconstituted by the inauguration of a new system of technic, and there is no modern profession whose superstructure, intellectually, scientifically and professionally, is undergoing such a rapid change as that of education, unless it be modern medicine.

The first thing you physicians have to do, if you are going to educate the teacher, is to make her intelligent about health. The teacher who was taught under our old system was no more intelligent about health than the average member of the public, yet she had control over many children every day, and they remained all these years in a mystery as to disease.

The first great proposition before the educational profession is to make ourselves intelligent about health, so that we may know what health standards are, and there are significant features in the protection of health. We have become enormously interested in the problem of health, because we have come in contact with the school physician. The average teacher now in all training schools is taught the more prominent symptoms that require attention and how to detect children who are suffering from eye troubles, troubles with the nose, adenoids, etc. Every teacher now talks about adenoids as if she was always used to it.

The outstanding fact of what we are trying to do in the public school at present is trying to make children conscious of social organization, of institutional life, and how they can attach themselves to these institutions. We are trying to make them understand what the community about them is, how it is organized, how to get into that community and make use of its resources. We are putting before the children as they develop, the whole problem of community life. We can help to adapt your program to the schools and we can put it over. We want a health program, and I believe that all our children ought to have a definite, practical knowledge as they come up through the grades increasingly of what we may call health controls, rules and regulations for health, couched in language children can understand, backed by your professional authority.

Dr. John M. Dobson, Chicago: One of the best and brightest things the American Medical Association ever did was to send a committee at its session in Los Angeles in 1911 to the meeting of the National Educational Association meeting in San Francisco the following week to convey greetings and to suggest more earnest attention to health problems in education. No one who has been in touch with this movement, as I have been fortunate enough to be since its beginning, could have been other than intensely gratified at the immediate, effective but continued response of the most enthusiastic sort on the part of the great leaders in education, like Mr. Owen. If we accomplish no other thing than bringing about a state of affairs whereby the committee of this great national teachers' organization should have made health the fundamental first standard in the school program, we shall have more than justified our existence.

Dr. Merritte W. Ireland, Washington, D. C.: I have been interested in Dr. Emerson's paper on periodic examinations of the population. We have been carrying on such examinations with the officers for fifteen years, and they have been of immense value to the officers' personnel and to the government. Previous to that time unenlisted men were examined when they came into the service, and if anything was found wrong, corrective measures were taken to put them in good physical condition. They were also examined when they went out of service and given advice. Fifteen years ago, President Roosevelt took up the question of periodic examinations of the officers' personnel. When that was begun we found a number of officers who were physically unfit, and they were eliminated from the service. Later these examinations were made annually. At present there is passing through the Surgeon General's Office a great public health program of examining 14,000 officers in the United States Army. These examinations will tell us exactly what is wrong and corrective measures will be taken. I am a firm believer in periodic examinations of the civic population. They have been of immense value in the army, and they will be of great valve to our local communities.

(To be continued)

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest; such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Gorgas Memorial Meeting.—A meeting was held at Birmingham, March 3, to initiate the Gorgas Memorial. Sir Auckland Geddes, British ambassador, and J. E. Lefevre, chargé d'affaires of the Panaman legation, Washington, D. C., delivered addresses. Solicitations for the fund for the memorial were conducted, February 20-27, which was known as "Gorgas Week," throughout the state.

CALIFORNIA

Free Public Lectures.—The fifth lecture in the series of popular medical lectures at the Leland Stanford Junior University School of Medicine, San Francisco, was given, March 3, by Ernest H. Baynes on "The Truth About Vivisection."

Annual Meeting.—In order that delegates, or members of their families, attending the annual session of the American Medical Association in St. Louis, May 22-28, may also attend the California Medical Association Convention at Yosemite, May 15-18, the Southern Pacific Company has announced that stop-over privileges will be allowed at Merced.

Physical Education Day.—The assistant state health superintendent of physical instruction, Stockton, recently directed an experimental physical education day. Schools were dismissed so that the teachers might attend the conference, and the day was spent in demonstration activities for the children, in which they exercised every muscle of their bodies.

Revival of Medical Society.—At a meeting called by Dr. William E. Musgrave, San Francisco, secretary-editor of the California State Medical Society, the San Benito County Medical Society was reorganized. The following officers were elected for the ensuing year: president, Dr. Leonard C. Hull; vice president, Dr. Richard W. Obannon, and secretary-treasurer, Dr. Chester W. Merrill.

Society for the Advancement of Women in Medicine and Surgery.——At a meeting of the society, held March 9, in San Francisco, Dr. Esther Pohl Lovejoy, president of the American Women's Hospital, New York City, delivered an address. The following officers have been elected for 1922: president, Dr. Mary Page Campbell; vice president, Dr. Matilda Feeley; secretary, Dr. Margaret Mahoney, and treasurer, Dr. Emma C. Fontaine.

DISTRICT OF COLUMBIA

Legislation for Tuberculous Children.—Senator Phipps of Colorado has introduced a bill in Congress providing for the construction of a building for the care of tuberculous pupils of the public schools of the District of Columbia. The cost of the proposed structure is fixed at $150,000.

ILLINOIS

County Medical Meetings.—New officers of various county societies are: Jo Daviess County Medical Society: president, Dr. Frank J. Shook, and secretary-treasurer, Dr. Ray E. Logan; Schuyler County Medical Society: president, Dr. Amos W. Ball, and secretary, Dr. C. Marshall Fleming; Stephenson County Medical Society: president, Dr. Benjamin A. Arnold, and secretary, Dr. John A. Asher.

Personal.—Dr. George A. Cloeletter, Hillsboro, has been elected president of the Montgomery County Medical Society. ——Dr. A. J. Roberts has been elected president of the La Salle County Tuberculosis Association, to succeed Dr. Maciejewski.——Dr. William E. Constant has been appointed superintendent of the St. Charles City Hospital, St. Charles.

Hospital News.—The contract has been let for the new Mercy Hospital at Champaign.——A home for indigent British people will be erected and endowed by the Daughters of the British Empire in Illinois at a cost of $100,000. The purpose of the institution is to relieve the community from paying taxes for the upkeep of aged destitute foreign-born residents.

Damage Suit Filed by Physicians.—The basis for a million dollar damage suit was filed in the circuit court last Decem-

ber by Drs. Leroy B. Elliston and Robert L. Elliston, La Salle, against the Franciscan Sisters of the Sacred Heart and Dr. Hugh M. Orr of St. Mary's Hospital. The declaration, presented, March 4, states that false allegations were made against the plaintiffs and that they were brought into "public scandal, infamy and disgrace" when they were barred from taking their patients to the hospital.

Chicago

President Wilbur Delivers John M. Dodson Lecture.—March 17, President Ray Lyman Wilbur of Leland Stanford Junior University delivered the first John M. Dodson Lecture to the students, alumni and faculty of Rush Medical College. His subject was "Medicine: A Look Ahead." The lectureship was established by the Alumni Association in recognition of Dr. Dodson's service to the college and to medical education.

Chicago Health Conference.—This conference was held March 13-18, under the auspices of the U. S. Public Health Service and the Illinois Department of Public Health. The cooperating agencies were the Chicago Department of Health, Illinois Social Hygiene League, and Chicago medical colleges and hospitals. Dr. Lee Alexander Stone, chief of the division of hospitals, social and industrial hygiene, Chicago Health Department, acted as permanent chairman. The conference consisted of physicians, social workers, bacteriologists, nurses, psychologists, psychiatrists, etc. It was decided to hold a similar conference next year in Chicago. Papers were read and lectures given on the Wassermann test, clinic management, and on all of the social aspects of venereal disease.

INDIANA

Personal.—Drs. Bert E. Ellis and Charles B. Collins have been appointed members of the board of health of Jasonville. ——Dr. John N. Hurty, Indianapolis, for twenty-six years secretary of the state board of health, has resigned to resume private practice.

MARYLAND

Joint Medical Meeting.—The Baltimore City Medical Society and the Section on Ophthalmology held a joint meeting, March 15, at which Dr. Hofrat Ernst Luchs, Vienna, Dr. George E. de Schweinitz, Philadelphia, and Dr. Lewellys Barker, Baltimore, were the speakers.

Maryland Tuberculosis Association.—The annual meeting of the Maryland Branch, National Tuberculosis Association, was held in Osler Hall, Medical and Chirurgical Faculty Building, Baltimore, March 16. The speakers were Dr. James Alexander Miller, president, and Dr. Charles J. Hatfield, director of the National Association. The meeting was presided over by Dr. Henry Barton Jacobs, president of the Maryland Tuberculosis Association.

Personal.—Dr. D. Z. Dunott, Baltimore, chief surgeon of the Western Maryland Railway Company, has been selected as one of the delegates from the American Railway Association to attend the International Railroad Congress at Rome, Italy, in April. Before the opening of the convention, Dr. Dunott will study sanitary and surgical conditions as affecting railroads in England.——Dr. Winford H. Smith, superintendent of the Johns Hopkins Hospital, has been requested by the Virginia Baptist Hospital, Lynchburg, to be consulting director of a 200-bed, three-unit hospital to be erected outside Lynchburg.

MASSACHUSETTS

New England Ophthalmological Society.—At the annual meeting of the society, held February 28, at Boston, the following officers were elected for the ensuing year: president, Dr. Frederick H. Verhoeff; vice president, Dr. William Norwood Souter, and secretary-treasurer, Dr. W. Holbrook Lowell.

Legislative News.—It is reported that the bill presented recently for providing additional remuneration for the chairman of the board of registration of nurses has been amended by the Committee on Public Service, and now appears as House bill 1312.——The Committee on Public Health has reported "leave to withdraw" on Senate bill 130, petition of Medical Liberty League relating to vaccination and school attendance, and House bill 1056, petition of George W. Reed for elimination of the requirement of a physician's certificate as to vaccination preceding admission to public schools.

MINNESOTA

Annual Clinic Week.—The fifth annual clinic week of the Hennepin County Medical Society will be held, April 10-13, at Minneapolis. The practitioner's short course in medicine, surgery, obstetrics and pediatrics will be held at the University of Minnesota Medical School at the same time.

MISSISSIPPI

Hospital News.—The nurses' home, with accommodation for thirty-eight nurses, of the South Mississippi Charity Hospital, Laurel, has recently been completed at a cost of $75,000. ——An addition has been built at the Rush Infirmary, Meridian, at a cost of $20,000, with a capacity of twenty-eight beds.——The McRae Hospital, Corinth, was destroyed by fire, recently.

Joint Medical Meeting.—A joint meeting of the Six Counties Medical Association of North Mississippi, composed of Yalobusha, Lafayette, Marshall, Benton, Toppah and Union counties, was held recently and the following officers elected: president, Dr. Peter W. Rowland, Sr., Oxford; vice president, Dr. Levi A. Barnett, Holly Springs, and secretary-treasurer, Dr. Peter W. Rowland, Jr., Oxford.

MISSOURI

Hospital News.—A new hospital, with seventy-four rooms, including a complete bath house, will be erected at Excelsior Springs in the near future.

Personal.—Dr. Peter T. Boham, Kansas City, was the principal speaker at the recent meeting of the Jasper County Medical Society, Joplin.——Dr. Claude P. Gryer, Maryville, has been appointed county health officer of Nodaway County.

Test for Drivers.—It has been announced by the chief of police, the health commissioner, and the hospital commissioner of St. Louis, that dispensary physicians who find arrested drivers of automobiles intoxicated will be required to state the findings in a formal letter for use in court, and must also appear as witnesses.

NEBRASKA

Dr. Frank Billings Addresses Lincoln Club.—March 17, the Knife and Fork Club of Lincoln entertained the Lancaster County Medical Society. The chief address was delivered by Dr. Frank Billings, Chicago. Dr. B. F. Bailey, president of the chamber of commerce, represented the county medical society with an address. Dr. Billings reviewed the advances in modern medicine, emphasizing that the family practitioner was the most valuable member of the American community, and that he should not be forced into specialized practice. He stated that it was his belief that the family practitioner was able to diagnose and treat 85 per cent. of the cases of illness without special instruments or training, and that if people of a community would first seek aid from him, instead of going to specialists in distant cities or in their own community at the first sign of illness, it will result in a saving to the layman and in the retention of the family physician.

NEW JERSEY

Legislative News.—A bill is before the legislature prohibiting the adulteration of ice cream with chemicals, supplementing the pure food act.——A measure has been introduced into the legislature prohibiting the manufacture of sale of milk products blended with any fats or oils other than milk fats.

Personal.—Dr. Charles F. Adams, Trenton, has been elected president of the recently organized medical officers of Camp Green.—Dr. Joseph W. Dennin, Roselle, has been appointed health officer of the city. Dr. Hugh H. Tyndall, Weehawken, has been appointed gynecologist at St. Mary's Hospital, Hoboken.——Dr. Thomas A. Clay, Paterson, has been awarded judgment by the court of errors and appeals sustaining his claim of appointment as health officer till December, 1923.—— Dr. William Kline has been elected vice president of the Phillipsburg board of education.——Dr. Harris Day, Ogdensburgh, has been made sanitary inspector.

NEW MEXICO

County Medical Meeting.—At the annual meeting of the Chaves County Medical Meeting, held recently in Roswell, the following officers were elected for 1922: president, Dr. Eugene M. Fisher, and secretary-treasurer, Dr. Charles M. Yater.

NEW YORK

Brooklyn Cardiological Society.—A meeting of the society will be held, March 30, under the presidency of Dr. William J. Cruikshank.

Transfer of Lepers.—It has been announced by the health commissioner that seventeen lepers, patients on North Brother Island, will be transferred to a new federal leper camp to be established by the U. S. government in Louisiana.

Personal.—Dr. Harvey S. Albertson has been appointed health commissioner of Oswego to succeed Dr. James E. Mansfield.——Dr. Stanton P. Hull, Petersburg, has been appointed a member of the New York State Public Health Council.——Dr. Nelson O. Brooks has been appointed health officer of Oneida.

New York City

American Legion Protests Against Closing Fox Hills Hospital.—The American Legion in New York State is calling upon its congressmen and senators to protest against the closing of the Fox Hills Hospital and scattering patients to all parts of the country. The Legion agrees that Fox Hills Hospital should be closed, but wants the men kept within the state.

Personal.—Dr. Hans Zinsser, formerly in charge of the sanitary inspection, successively in the First and Second Army Corps, American Expeditionary Forces, was awarded the Distinguished Service Medal at Governors Island, March 17, for his successful operation of a plan of military sanitation and epidemic disease control while serving with the Second Army Corps.

Foreign Mail Inspected for Typhus.—Mail matter reaching New York from European countries infested with typhus is to be subjected to examination by the health department through an arrangement with Postmaster Edward M. Morgan. When ships dock, inspectors of the health department will inspect the mail. Health Commissioner Copeland has also undertaken a campaign to have persons owing property within a block of the water front clear their premises of rats as a precaution against bubonic plague.

Community Health Service Organization.—A new venture in health conservation has been organized under the name of "The Committee for the Study of Community Organization for the Self-Support of Health and Protection of Mothers and Young Children," in cooperation with the Maternity Center Association, the Henry Street Visiting Nurses Service, and the New York Diet Kitchen Association. Health service has been offered residents of certain districts for $6 a year, covering: supervision for pregnant mothers; assistance at confinement; baby health service for babies under 2 years; health supervision of children from 2 to 6 years of age, and visiting nurse service for sick persons of all ages.

Bureau of Hospital Information.—Following the survey of hospital work in New York City made by the Public Health Committee of the New York Academy of Medicine, the United Hospital Fund of New York has established a hospital information bureau at 15 West Forty-Third Street. The aims of this bureau are to keep in touch with hospital work and progress in the city; to furnish information to all interested with regard to administration, record keeping and other facts concerning hospital work, organization and facilities; to study and make known the hospital needs of the city; to prepare exhibits; to maintain a library of hospital reports and statistics, also of record forms and blanks used in the several departments of the hospitals; to promote uniformity in hospital reporting; and, whenever called on by the hospitals, to assist in such administrative and efficiency studies as will be of value to the hospitals, municipal and private, and to publish annually, or more often, information concerning hospitals. E. H. Lewinski-Corwin, Ph.D., has been appointed director of the bureau, and Drs. W. Gilman Thompson and Sigismund S. Goldwater have been appointed on the committee in charge.

OHIO

Personal.—Dr. Rush R. Richison has recently resigned as health director of Springfield.——Dr. James G. Freshour has been appointed health officer of Piqua to succeed Dr. James H. Lowe who resigned, March 10.——Dr. Charles H. McFarland will resign as superintendent of the Cleveland City Hospital.——Dr. Gordon Brammerman was serverely injured, March 9, when the automobile in which he was riding was struck by a truck.

Penitentiary Survey.—In an effort to rid the penal institutions in the state of tuberculous prisoners, Dr. H. S. MacAyeal, director of public welfare, has inaugurated a survey of the penitentiaries, reformatories and industrial schools to discover the tuberculous inmates. Dr. MacAyeal is endeavoring to have all the tuberculous victims liberated, or in the event of capital offenses to segregate them, asserting that the confinement endangers not only their lives but also the lives of those with whom they come in contact.

Hospital News.—A home for old women will be erected at Marion by the trustees of the Wedell Old Ladies' Home, at a cost of $20,000.——A National Children's Home will be established in Ohio in connection with the Brotherhood of American Yeomen. Newark has been considered as a possible site. ——Work has been started on the Rickly Memorial Hospital, to be erected at the Ohio Masonic Home, Springfield. The hospital will cost more than $500,000.——The staff of the Hospital Clinic of Cleveland has announced the opening of a general hospital and clinic at 8803 Euclid Avenue, Cleveland, March 1. The staff is organized into eight separate departments of medicine and surgery, with sixteen physicians on the staff. There is, in addition, a laboratory and a department of radiology, each in charge of a physician.

PENNSYLVANIA

Mellon Lectures.—Dr. Thomas Lewis, London, England, will deliver the seventh Mellon lecture before the Society of Experimental Biology of the School of Medicine, University of Pittsburgh, on clinical electrocardiography, May 8.

Hospital News.—Construction has been started on the nurses' home for Western Pennsylvania Hospital, Pittsburgh, to house 250 nurses, which will be erected at a cost of $600,000. The building will be six stories high, fitted with all modern equipment, including a roof garden and sleeping porches above the auditorium. A tunnel will connect the home with the hospital.——Dr. H. Bruce Boring has been appointed superintendent of the Grand View Hospital, Sellersville.

Personal.—Prof. Charles R. Stockard of the department of anatomy, Cornell University Medical College, delivered a lecture on heredity at the meeting of the Philadelphia Pediatric Society, March 14.——Dr. Hugh Cabot, dean of the medical school, University of Michigan, Ann Arbor, addressed the alumni of the University of Michigan Club, at its thirteenth annual dinner in Philadelphia, March 17.——Dr. DeWayne G. Richey, Pittsburgh, pathologist, Mercy Hospital, and lecturing pathologist at the University of Pittsburgh, has been appointed county pathologist of Allegheny County.

Philadelphia

City Establishes Psychiatric Clinic.—To aid in the prevention of mental diseases the department of public health has established a neuropsychiatric clinic at the Philadelphia General Hospital, with a staff of expert psychiatrists and assistants. The clinic has a double function—the treatment and observation of patients who are not classed as insane and are discharged from the psychopathic wards of the hospital, and the examination of patients for early manifestations of mental disease.

VIRGINIA

Personal.—Dr. Dean B. Cole has resigned as head of the tuberculosis department of the Richmond Health Bureau.——Dr. Claude D. J. MacDonald has been appointed city coroner of Norfolk, to succeed the late Dr. J. Judd Miller.

Medical Schools Merger Defeated.—It has been reported that delegate Wilkins, Newport News, offered a resolution "that it is the sense of the General Assembly of Virginia that no change be made at this time in the policy of the state concerning medical education, and that the institutions aforesaid, university colleges of medicine and medical colleges of university should not be merged." This was the final argument in the proposed merger of the University of Virginia Department of Medicine, Charlottesville, and the Medical College of Virginia, Richmond.

WASHINGTON

Rabies Outbreak.—An outbreak of rabies is raging in the eastern part of the state of Washington. The disease made its appearance among coyotes in a virulent form last August, and soon spread to many counties of this section of Washington.

WISCONSIN

Hospital News.—The new six-story hospital to be constructed at Madison will be erected at a cost of $797,670, exclusive of equipment.

Personal.—Dr. Minnie M. Hopkins, Oconto, has been appointed a member of the Wisconsin Board of Medical Examiners.——Dr. Edward L. Miloslaich, formerly of the University of Vienna, has been appointed head of the pathologic department of St. Mary's Hospital, Milwaukee.

PHILIPPINE ISLANDS

Establishment of Puericulture Centers.—The towns of Orani, Herlosa, Balanga, Oroin, Mariveles and Limay, in the province of Bataan, have filed puericulture incorporation papers in the bureau of commerce.

Banquet to General Wood.—The Colegio Médico-Farmacéutico of the Philippines joined recently the Manila Medical Society and the Philippine Islands Medical Association in offering a banquet to Governor Wood. Dr. Benito Valdés acted as toastmaster, and speeches were made by Drs. Ricardo Fernández, Daniel de la Paz, Otto Schobl and General Wood.

Anesthetic Lepers.—It has been announced by the Philippine Health Service that patients with anesthetic leprosy, in which no leprosy bacilli can be demonstrated from the skin or the nasal septum, may be paroled, provided they report for examination once a month for three months. Reexamination of patients every six months will be necessary in previously positive cases after they have been apparently cured and released, having remained bacteriologically negative and without clinical evidence of cutaneous lesions continuously for two years.

CANADA

Elgin Medical Association.—At the annual meeting of the association, held recently, the following officers were elected: president, Dr. Rupert W. Gliddon; treasurer, Dr. Angus McPherson, and secretary, Dr. Duncan McKillop.

Memorial to War Heroes.—At a recent meeting of the Toronto Academy of Medicine, Dr. Newton A. Powell, chairman of the Hospital Supplies Committee, presented a bronze tablet to the academy in memory of the fellows who died in active service during the World War. Dr. Edwin E. King read the names of those who had died, and the last post was sounded. On the same occasion, the portrait of Dr. James A. Temple was formally presented to the academy.

Hospital News.—A new hospital will be erected at Elgin, Ont., in the near future, at a cost of about $200,000.——The Belleville General Hospital, Belleville, Ont., recently received a bequest of $40,000 for the erection of a nurses' home, by the will of the late Thomas Ritchie. A further sum of $20,000 will be donated to the hospital on the death of his wife.——A new nurses' home will be constructed at the Brockville General Hospital, and the present nurses' home will be used for private wards, as the institution is greatly overcrowded.

Personal.—Dr. Norman MacLeod Harris has been appointed chief of the division of medical research of the Dominion Department of Health. Dr. Harris served four years overseas with the Canadian Army Medical Corps.——Dr. Frederick S. Baines has been appointed physician on the staff of the public health department of Toronto.——Dr. George S. Jeffrey has been appointed physician at Burwash Prison Farm.——It has been officially announced that Major Gen. John T. Fotheringham, M.D., Toronto, has been appointed honorary physician to the governor general.——Dr. John Hunter, Toronto, has been elected a member of the local school board.——Dr. E. N. Cootes, Agincourt, has been appointed superintendent of the Freeport Sanatorium, Preston, Ont. During the late war Dr. Cootes served in Egypt with the Royal Army Medical Corps.

GENERAL

American Proctologic Society.—The twenty-third annual meeting of the society will be held, May 22-23, at St. Louis, under the presidency of Dr. Granville S. Hanes, Louisville.

Drug Smuggling in Florida.—Federal Prohibition Commissioner R. A. Hayes has announced that Col. L. G. Nutt, head of the Narcotic Division, is in Florida with a squad of narcotic experts investigating drug smuggling in Florida and a number of foreign points in southern waters. This investigation is being supported and aided by customs officials.

American Chemical Society.—The annual meeting of the society will be held at Birmingham, April 3-7, under the presidency of Edgar F. Smith, who will turn over to the society dies for the Priestly medal, together with funds that have been donated for the purpose of presenting, every two years, a medal for the most distinguished work in the science of chemistry. April 1, a visit will be paid to the government cyanamid plant at Muscle Shoals.

National Hospital Day.—May 12, the anniversary of the birth of Florence Nightingale has been set aside as National Hospital Day. National Hospital Day was inaugurated in 1921 as a day on which every hospital may acquaint its local constituency with the workings and aims of the hospital. Mr. M. O. Foley, 537 South Dearborn Street, Chicago, secretary of the National Hospital Day Committee, is directing the celebration of the day for all hospitals, civilian and otherwise.

American Society for the Control of Cancer.—The annual meeting of the society was held, February 25, at its new office, 370 Seventh Avenue, New York City. The following officers were elected for the ensuing year: president, Dr. Charles A. Powers; vice presidents, Drs. Clement Cleveland, M. F. Engman, James Ewing and Edward Reynolds; secretary, Thomas M. Debevoise, and treasurer, Mr. Calvert Brewer, U. S. Mortgage and Trust Company. All these officers held office during the previous years, with the exception of Mr. Calvert Brewer. Cancer week will be held in the fall, and it is requested that physicians and surgeons not now in active practice of their profession do such volunteer work as possible in preparing publicity material and writing special articles.

LATIN AMERICA

Reciprocity with Mexico.—We are informed that reciprocal relations have been established between the state of Arizona and the state of Sonora, Mexico, so that those who have been licensed in Arizona are eligible for registration in Sonora without further examination.

The Rockefeller Foundation in Brazil.—The *Brazil-Medico* announces the arrival at Rio de Janeiro of Dr. F. F. Russell, a director of the Rockefeller Foundation, and a pioneer in vaccination against typhoid. Dr. R. Pearce, a director of the foundation, had also arrived, on his way to S. Paulo.

Equiparation of Paraná Medical School.—The *Brazil-Medico* relates that the authorities in Brazil have accepted the medical school at Paraná, founded in 1918, as conforming to requirements, worthy to rank with the other schools of the country. The state of Paraná is southwest of Rio de Janeiro.

Appropriation for Smallpox.—The American Red Cross field director, Santo Domingo, has appropriated $2,000 for food, medicines and burial expense in the smallpox epidemic which has been prevailing in Santiago, Meca and La Vega, Dominican Republic. Quantities of vaccine have been supplied by the U. S. Navy. During the week March 20-26, 225 deaths from the disease were reported.

The "Archivos de Pediatría."—With this year, the *Archivos Latino-Americanos de Pediatria* changes from a bimonthly to a monthly journal. The directors of the *Archivos* are Dr. L. Morquio of Montevideo and Dr. Aráoz Alfaro of Buenos Aires, and they have the cooperation of all the pediatricians on both sides of the La Plata River as well as in Brazil and elsewhere in Latin America. It is now in its fifteenth year.

Brazilian Society Appoints Officers.—The medical society of Porto Alegre appointed recently the following officers: president, Prof. Sarmento Leite; vice president, Prof. Annes Dias; secretary general, Prof. Guerra Blessmann; first secretary, Dr. Leonidas Escobar; second secretary, Dr. Hugo Ribeiro; treasurer, Prof. Plinio Gama; recorder, Prof. Argymiro Galvao; editors of the *Archivos Rio-Grandenses de Medicina*, Profs. Annes Dias, Ulysses de Nonohay and Guerra Blessmann.

FOREIGN

New Official Journal.—The *Journal of the German Red Cross* is the title of an official monthly publication, issued for the first time in January by the Red Cross Society of Germany, and published in Berlin.

Smallpox in Spain.—A smallpox epidemic has developed at Zaragoza, Spain. The disease, however, has shown a tendency to remain stationary, without making much progress. Influenza is also very prevalent, in the same town, hundreds of cases having occurred.

Medal for Distinguished Service Conferred on French Medical Officers.—The *Paris Médical* states that the ambassador from the United States has conferred the Distinguished Service Medal, in the name of the President, on four French medical officers, Dr. Février, medical inspector general; Dr.

G. Bergasse, medical inspector, Major E. Rist and Major M. Hanotte.

Union of Special Societies.—The *Presse Médicale* comments approvingly on the recent organization at Strasbourg of the Société de Neuro-Oto-Oculistique, as neurology, ophthalmology and otolaryngology form a sort of natural group with interlapping interests. The officers are the professors of these various specialties, with Barré, professor of neurology, as president.

New Cancer Journal.—We have received the first number of *Les Néoplasmes*, a bimonthly devoted to the literature, the study and the treatment of tumors and cancers. The editorial staff consists of J. Thomas and P. Delbet for the medical and surgical aspects of the subject, and C. Schmitt for radiotherapy. The publishers are Vigot Frères, 23 rue de l'Ecole de Médecine, Paris, and the subscription is fixed at 18 francs. The first number contains two original articles, one by A. Robin on the erythrocytes in malignant disease, and the other by Delbet on the comparative value of roentgen, radium and surgical treatment of cancer.

Deaths in Other Countries

Professor **Löhlein,** director of the Anatomical and Pathological Institute, Marburg, died recently, aged 44.——Dr. **William Craig,** former lecturer on materia medica at the Medical College for Women, Edinburgh, Scotland, and editor of *Milne's Materia Medica and Posological Tables,* died recently, aged 89.——Dr. **Francisco E. Bustamente** of Maracaibo, Venezuela, at an advanced age, a surgeon, senator, and at one time ambassador from Venezuela at Washington. ——Dr. **N. De Dominicis,** professor of pathology at the University of Naples and author of numerous works on pathology. His experimental research on glycosuria after removal of the pancreas paralleled in time that in Germany by Minkowski and Mering.——Dr. **G. Mazzoni,** instructor in surgery at the University of Rome.——Dr. **H. Roerink,** professor of surgery at the University of Rostock.——Dr. **Leudet** of Paris, former president of the Société d'Hydrologie and of the Paris Société de Médecine.——Dr. **Emile Lust** of Brussels, one of the earliest pioneers in the movement for infant welfare work, organizing the National Child Protection League in Belgium and then the International Union for Protection of Young Children. He was in charge of the Central School of Puericulture in Belgium and of the organized milk station service, and was a member of a number of scientific societies at home and abroad, with decorations from various countries.——Dr. **Alcide Treille,** professor emeritus of the Alger medical school.

Government Services

Public Health Service Holds Conference on Future of Public Health

An important conference, at which the future of public health in the United States and the education of sanitarians was discussed, occurred in Washington, D. C., March 14 and 15, under the auspices of the United States Public Health Service. The term "sanitarian" was used to include not only health officers employed by states, counties, cities and the national government, but also all those employed in many other capacities in the work of public health in the United States. The transactions are to be printed as a public health bulletin by the Public Health Service. The conference was attended by many who had participated in the Congress on Medical Education, Medical Licensure, Public Health and Hospitals of the American Medical Association in Chicago the preceding week.

Surgeon General Cumming made the introductory address, explaining the aims of the conference. Dr. William H. Welch, director, School of Hygiene and Public Health, Johns Hopkins University, assumed the chairmanship of the Tuesday morning session. Dr. Allen W. Freeman of Johns Hopkins University gave a background to those present at the conference of the development of the public health movement so as to enable them more intelligently to consider the principal problems before the conference. Dr. Freeman gave a brief historical sketch of public health work in the United States, and an estimate of the total number of persons employed in all kinds of public health work, including those employed by federal, state, county and municipal governments, private agencies (including industries) and schools.

Dr. Milton J. Rosenau, professor of preventive medicine and hygiene, Harvard Medical School, addressed the conference on the present status of education for a public health career, giving a statement of the number of schools of hygiene and public health in the United States, with a brief description of their curriculums.

A report was made by Dr. Frederick R. Green, of the American Medical Association, of the 1922 Congress on Medical Education, Medical Licensure, Public Health and Hospitals, together with the conclusions of this congress regarding the education of sanitarians.

Dr. W. A. White referred to the importance of the mental hygiene movement, the relationship of the mental hygiene clinic to other clinics, and educational measures which may be undertaken by boards of health. In considering the subject of child hygiene, Dr. R. M. Smith also spoke of prenatal hygiene, the hygiene of infancy, school hygiene, the mental hygiene of childhood, and the physiology and hygiene of exercise and play. These newer aspects of public health are of particular importance in the consideration of the training of sanitarians. In speaking of the economic and sociological aspects of public health, Dr. L. K. Frankel pointed out the social forces in a community available for the assistance of sanitarians in public health work, and how the economic and sociological conditions of population groups are related to the public health and to what extent these conditions are subject to social control. Dr. J. F. Williams explained the importance of physical education as a public health measure, particularly that phase of the subject which deals with the health of the child through education, and proposed a positive physical education program, making reference to the increasing demand for adequately trained specialists in the field of physical education and to the necessity of organized health instruction. Dr. O. P. Geier spoke of the growing importance of industrial hygiene and of the prevalence of the industrial diseases and their prevention through organized health work in industries, mentioning particularly the need for recognizing the importance of fatigue and mental hygiene in industry. He showed what courses of study and field work should be provided by the school of public health in order that its graduates may be able to deal with these various problems in industry. Dr. C. E. Seashore made the concluding statement of the series of six, dealing with certain newer aspects of public health which seem particularly important in the education of sanitarians. Dr. Seashore gave reasons for the recognition and the participation of the educational psychologist in all thoroughly organized public health organizations, and why the present "hit or miss" manner of attempting to educate the public in regard to health problems must give way to a more scientific procedure.

TUESDAY AFTERNOON SESSION

The Tuesday afternoon session was called to order by Dr. Hubert Work, chairman of the afternoon session. He called on Dr. C.-E. A. Winslow, professor of public health, Yale University School of Medicine, to discuss into what specialized fields public health work will be differentiated in the future, and in what colleges and professional schools will men for these various fields be trained.

Dr. Walter H. Brown, National Child Health Council, addressed the conference on the importance of developing in the local health unit a higher degree of efficiency in public health work, and suggested practical means of approach in the realization of an ideal city or county health organization. Dr. A. J. McLaughlin, United States Public Health Service, in a similar manner visualized for his audience the ideal state department of health of the future, and suggested academic training necessary to enable the schools of public health to provide health officers who will be able to organize all existing forces in the state interested in public health.

The fields of public health work in which future progress depends on further research were enumerated by Dr. A. M. Stimson, U. S. Public Health Service, and the qualities needed for successful research work were shown. Dr. Stimson suggested ways by which medical schools and schools of public health may develop men with these qualities for the researches now awaiting attention.

The section of the afternoon session considering what kind of sanitarians are needed for the future closed with discussions led by Dr. Vernon Kellogg, National Research Council, and Dr. A. T. McCormack, state health officer of Kentucky.

The section called for the purpose of discussing how more and better sanitarians may be recruited was opened by Dr. E. O. Jordan, University of Chicago, who spoke about rea-

sons given by medical students for not entering schools of public health and public health work. Dr. Jordan reported the results of certain inquiries conducted by himself, and gave in the language of the medical student his reasons for not entering the field of public health work.

Dr. John A. Ferrell, International Health Board, suggested how the career of the public health officer may be made more attractive, speaking primarily of the need of recognizing the value of public health work, both on the part of the medical student and the public, and of the problems of tenure of office and compensation.

After the discussions led by Dr. Frank J. Goodnow, president, Johns Hopkins University, and Dr. L. L. Lumsden, U. S. Public Health Service, the Tuesday afternoon session adjourned.

WEDNESDAY SESSIONS

Wednesday, the conference convened at 9:30 a. m., under the chairmanship of Dr. Hugh Cabot, dean of the University of Michigan Medical School. Dr. James R. Angell, president, Yale University, discussed, from the standpoint of a university president, the suggestions made by Dr. Winslow at the Tuesday afternoon session and made general suggestions regarding the courses which it will be necessary to include in the curriculums of the various colleges and the professional schools of the modern university, if the university is to measure up to its present opportunities in the training of sanitarians.

Dr. George C. Whipple, professor of sanitary engineering, Harvard University, presented a proposed curriculum for a school of public health, intended primarily for students in a school of public health who expect to become public health administrators, and also suggested modifications in the curriculum for those intending to take up special work.

Dr. H. F. Vaughan, commissioner of health of Detroit, Dr. Annie Goodrich, Teachers' College, Columbia University, and Dr. William Darrach, dean, School of Medicine, Columbia University, led the discussions of different phases of the papers presented by Drs. Angell and Whipple.

Dr. Roger Perkins, Western Reserve University School of Medicine, presented the problem of providing extended supplemental education for a large number of health officers and other sanitarians now employed who were trained some years ago in medical schools and who have had no special academic training to equip them for their present positions, and also the problem of providing for those who wish to assume certain relatively minor positions without entering a school of public health for a year's work or more. These problems were further developed in discussions led by Dr. Eugene R. Kelley, state health officer of Massachusetts, and Dr. S. J. Crumbine, state health officer of Kansas.

The round table which was called at 1 p. m., presided over by Dr. Frank J. Goodnow, president of Johns Hopkins University, took up for general discussion a number of specific questions developed at preceding sessions which were proposed by the chairman.

The concluding addresses were given by Dr. Ray Lyman Wilbur, president, Stanford University, who spoke on the university of the future—a recruiting and training center for the public health professions; by Dr. Lewellys F. Barker, Johns Hopkins Hospital, presenting a paper on "Public Health and the Future Commonwealth," and by Dr. David L. Edsall, dean of the Medical School and School of Public Health, Harvard University, who gave a recapitulation of the conference, and a report of the Committee on Recommendations, composed of Dr. David L. Edsall, Dr. Ray Lyman Wilbur, Dr. Victor Vaughan, Dr. William H. Welch, Dr. E. G. Williams and Dr. A. J. McLaughlin. On behalf of this committee, Dr. Edsall reported the following resolutions:

That the Congress of the American Medical Association on Medical Education, Medical Licensure, Public Health and Hospitals include a section on the education of health officers and sanitarians.

That the Surgeon General of the United States Public Health Service be requested and empowered to appoint a committee including Dr. C. C. Bass, New Orleans; Dr. W. H. Howell, Baltimore; Dr. A. J. McLaughlin, U. S. Public Health Service; Dr. E. O. Jordan, Chicago; Dr. M. J. Rosenau, Boston; Dr. R. L. Wilbur, Palo Alto, Calif.; Dr. Ennion Williams, Richmond, Va.; Dr. C.-E. A. Winslow, Yale, and Dr. D. L. Edsall, Harvard, the committee to enlarge itself to fifteen, and that this committee consider whatever questions it sees fit and take whatever further action for future conferences may seem wise in order to continue the activities that this conference has started.

Surgeon-General Cumming made a brief concluding address in which he said: "I am sure we have planted a tree in the last two days which will bear much fruit," after which the conference stood adjourned.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 3, 1922.

Exclusion of Women Students from the London Hospital

The decision to take no more women medical students at the London Hospital has aroused considerable discussion. The reason is not that women have proved unsatisfactory students but that the difficulties of educating them with men have proved too great. They were first admitted in 1908. It was then found that a number of men students would not join the hospital if they were to be taught with them. Further, at the hospital great difficulties were experienced in teaching certain subjects to mixed classes. But the discussion has brought to light evidence to the contrary. Dr. W. J. Fenton, dean of Charing Cross Hospital, has never found any difficulties. He argues that, in medical education and science, sex does not enter at all. At Edinburgh University, where there are about 400 women medical students, no difficulty is found in instructing them in the same classes as men. The only class in which they are taken separately is midwifery. The experience is the same in many provincial Scotch and Irish medical schools—Aberdeen, Belfast, Birmingham, Cardiff, Manchester, Leeds, Glasgow and Dublin. But at Dundee and Manchester, sympathy is expressed with the views entertained at the London Hospital.

The Closing of the Military Orthopedic Hospital

On grounds of economy, which has become urgent in our national finance, it is proposed to close the military orthopedic hospital at Sheperd's Bush (London). In a letter to the *Times*, Sir Robert Jones opposes this. He points out that in the early days of the war this hospital was conceived as anatomically reconstructive and physiologically reeducative. It has become an inspiration as well as a source of surgical practice. Founded to treat by mechanical and operative methods, in conjunction with complete and elaborate installations of electrical and other curative means, it specialized in those graver cases which called for prolonged retention in the wards and many months and even years of after-care. For its unique equipment and staff work, as a pioneer of recent orthopedic surgery and for its continued postwar activity, the hospital has become recognized as a distinguished center. Only by the persistent application of every branch of medical science practiced there can many of the present patients be restored to comparative ease of movement and capacity for work. Any attempt to institute elsewhere the expensive equipment of Sheperd's Bush would increase instead of save expenditure, and would diminish the unity and efficiency of the staff.

The Action of Light on the Body

The Medical Research Council has appointed a committee to advise it with regard to the promotion of researches into the biologic action of light, with a view to obtaining better knowledge of the action of sunlight and other forms of light on the human body in health and in disease. The committee consists of physiologists and physicians—Prof. W. M. Bayliss, F.R.S. (chairman); Mr. J. E. Barnard; Dr. H. Dale, F.R.S.; Capt. S. R. Douglas (late of the Indian Medical Service); Sir Henry Gauvain; Dr. Leonard Hill, F.R.S., and Dr. J. H. Sequeira. Professor Bayliss is one of the foremost English physiologists. Mr. Barnard is a well-known microscopist and the inventor of a new microscope. Dr. Dale is known for his work on anaphylaxis and the action of

drugs. Sir Henry Gauvain is the pioneer in this country on heliotherapy in the treatment of surgical tuberculosis. Dr. Leonard Hill is well known for his researches on blood pressure, ventilation and other subjects. Dr. Sequeira is a dermatologist.

Rockefeller Gift to London

The Rockefeller Foundation has made a gift to London of $2,000,000 to build and equip a school of hygiene. It is not two years since the foundation gave $10,000,000 to University College Medical School.

A Lister Memorial

The tenth anniversary of the death of Lister brings within view the completion of a scheme to honor his memory. Soon after his death the question of a memorial was taken up, but the war prevented its being carried out. A representative committee was appointed, and collected $60,000, which was subscribed from all over the world. Out of this has been established the International Lister Fund for the Advancement of Surgery. A sum of $2,500, with a bronze medal, will be awarded every three years, irrespective of nationality, in recognition of distinguished contributions to surgery, the recipient being required to give an address in London under the auspices of the Royal College of Surgeons. The award will be made by a committee of members nominated by the Royal Society, the Royal College of Surgeons of England, the Royal College of Surgeons of Ireland, and the Universities of Edinburgh and Glasgow. The Royal College of Surgeons of England will be the trustees and administrators of the fund.

Sir Thomas Brock, the sculptor, has executed a memorial tablet to Lister, which was unveiled in Westminster Abbey in 1915. He is at present engaged in designing a bronze bust to be mounted on a pedestal in Portland Place, near Lister's last home. The bust and pedestal will stand about 21 feet high. The front of the pedestal will be decorated with bronze figures representing Humanity pointing out the bust of Lister to a boy bringing garlands of flowers. Laurel wreaths will be included in the scheme of ornamentation, and there will be an inscription at the foot of the pedestal.

The Altering Modern Face, and Adenoids

Sir Arthur Keith and G. G. Campion, a dentist, have communicated to the British Dental Society an elaborate paper on the growth of the human face in which they reach important conclusions as to the causation of adenoids. Observations of Keith on prehistoric English skulls have convinced them that in a considerable portion of the modern population of Britain there is a tendency for the face to become longer and narrower. Bony matter appears to be laid down to about the same amount in these long, contracted, hatchet faces as in the shorter, wider, more primitive prehistoric faces; but from some alteration in the mechanism of growth, new bone which was laid down to add to the width of the face is, in a large proportion of present-day people, deposited so as to increase length at the expense of width. With this reduction in width comes a pinching of the facial skeleton from side to side, leading to the irregular projection of points in the middle line of the face. The mechanism of facial growth is influenced by the functional state of the pituitary and of the sexual organs. The so-called adenoid face, the narrow, deep palatal arch, the irregular eruption of the teeth, are not due to a simple mechanical cause, such as enlarged tonsils or adenoids in the tidal way. The authors regard these conditions and the disordered growth of the face as due to manifestations of a single pathologic state. What the exact nature of this state is they are not in a position to decide. But the close relation between bone growth and the action of the glands of internal secretion, on the one hand, and the frequency with which a hypertrophy of the lymphoid system is accompanied by defective formation of bone, on the other, render it not difficult to believe that irregularities of the jaw and the development of adenoids may result from nutritional disturbance. The explanation may come through the kind of research now being conducted by McCarrison, who has shown that a diet deficient in certain vitamin constituents will affect the normal working of the hormone growth systems of the body. Vitamins appear to act directly on the glands of internal secretion. The defects so frequent in the development of the English or rather Nordic face may prove to be the result of some deficiency or error of the dietary on which infants are reared. No doubt, too, our modern dietary is of a kind which leaves teeth, jaw and muscles of mastication imperfectly exercised. The physical stimuli, which are necessary for the normal growth of bone, are missing. This, too, may be a factor in gnathic degeneration.

PARIS

(From Our Regular Correspondent)

Feb. 17, 1922.

Bergson's Opinions on Modern Education

The value of classical studies in secondary education having been, for some time, the theme of much lively controversy, it is interesting to note the ideas on the subject entertained by the famous author of "Evolution créatrice." Bergson regards the study of Latin and Greek as very useful. In considering the utilitarian and the culture value of classic studies, he does not take into account merely the immediate good that is derived from them, but attaches a greater importance to certain special qualities and habits of thought that these studies develop in the mind of the student, whereby the studies taken up later at the university are rendered more fruitful and are given a deeper sociological content. Among other arguments, Bergson cites the testimony of the president of Columbia University, New York City, who in a report recently published, expressed himself in substance as follows:

> There are many signs that indicate that the time is near at hand when a comprehensive and renewed inquiry must be instituted to determine the value of the ancient classics considered as instruments of education. Many of those who have shown the greatest contempt for classical studies are beginning to ask themselves whether it was wise to take the extreme positions that they have been led to take. Many of those who have been indifferent on the subject are commencing to show signs of repentance as the results of their indifference become more and more apparent. . . . It is a question of no mean practical significance to determine how we are going to repair the damage caused by the growing contempt for the ancient classics, which has characterized the past generation.

While Bergson attaches great value to Greek and Latin, he recommends that the study of the sciences, more particularly the experimental sciences, shall receive more emphasis in secondary schools than they have received in the past. However, in his opinion, the strengthening of the courses of study is of less importance than another measure that he proposes, namely, a modification of the present method of determining who are entitled to be admitted to the secondary schools. Bergson holds that, if a more careful selection of pupils were made, more subjects could be studied and more rapid progress would be possible. He also holds that severe tests should be given to determine the pupils who are entitled to be promoted from one class to the next higher. He favors, too, the establishment of a large number of scholarships in secondary schools, which would make it possible for many intelligent and industrious pupils from the elementary schools to enter the secondary schools who are now excluded for lack of funds. The *lycée*, or classical secondary school, could then be reserved for the classical studies and the training of the intellectual élite. Children of the bourgeoisie should not

be admitted unless they give evidence of special aptitude for classical studies. At present, the intellectual make-up of the pupils of the *lycée* is largely a matter of chance.

In addition to the *lycées*, in which the classical studies would be strengthened in a twofold manner by increased emphasis on the sciences and belles-lettres, Bergson recommends the organization of more technical, industrial, commercial and agricultural schools of all kinds—primary, secondary and academic. In the industrial secondary schools a simplified instruction in literature could be offered, with Greek and Latin eliminated, but it would be advisable to select instructors who had enjoyed the benefits of a classical education.

A Monument to Professor Chauveau

The death of Professor Chauveau, former president of the Academy of Sciences, the Academy of Medicine, the Society of Biology, the French Association for the Advancement of Science, etc. (THE JOURNAL, Feb. 10, 1917, p. 475), dates back to the beginning of January, 1917. At that time, the attention of the public was centered entirely on the war, so that it has been reserved for this day to appoint a committee for the purpose of collecting the necessary funds with which to erect a monument to Professor Chauveau. The treasurers of this committee are: Dr. Nicolas, professor of the Faculté de médicine of Lyons, and Monsieur Boucher, professor of the Ecole vétérinaire of Lyons.

Homage to Prof. Raphael Lépine

The pupils and friends of the late Prof. Raphael Lépine, whose home was in Lyons, propose to honor the memory of this clinical investigator by placing a bronze likeness, in the form of a plaque, in the amphitheater of the clinic in which he was an instructor for thirty-four years. A subscription has been opened with this purpose in view. Contributions, which must not exceed 50 francs, may be sent to Dr. Froment, 25, rue Godefroy, à Lyon (Rhône).

BUENOS AIRES

(From Our Regular Correspondent)

Jan. 23, 1922.

Tuberculosis

The antituberculosis campaign continues to receive a great deal of attention in the literature and in lectures, but the measures actually put in force are few compared with the number of plans and projects. Dr. Clemente Alvarez of Rosario has considered the past, present and possible future of tuberculosis control in Argentina, basing his data and conclusions on his great experience in this field. He points out that statistics here are very deficient through mistakes or concealment as regards the real diagnosis. There are several provinces in which 40 and even 75 per cent. of the people die without a medical diagnosis being made of the cause of death. In Buenos Aires the total mortality from infectious diseases in the last three decades was 19,212, 9,403 and 9,891, respectively, which shows the enormous decrease brought about by sanitary improvements, in spite of the considerable increase in population. On the other hand, the total mortality from tuberculosis was 11,040, 15,959 and 23,019, respectively, an increase in the same period. However, the relative death rate has decreased up to 1914, when it was 14 per 10,000 for the whole country, and from 15 to 16 per 10,000 in Buenos Aires. Unfortunately, since 1914 it increased again up to 22 per 10,000 in 1918, when it began to decrease again. It seems as if these fluctuations had coincided with the economic crisis. In the same year we had the lowest birth and marriage rates ever recorded here. Dr. Alvarez calls attention to the susceptibility of the natives, which is a well known fact, and that of the negroes, a race almost extinct in Argentina. The decline of the high death rate which prevailed until thirty or forty years ago has coincided with the large European immigration. Of the foreign colonies, the one most affected by tuberculosis is the Spanish nationality. Dr. Alvarez refers extensively in his work to the existing institutions and prophylactic measures actually in force or suggested.

Influenza

Since the middle of December, ships arriving from Europe have been bringing patients with influenza, pneumonia or bronchopneumonia. On this account, a large number of ships have been under observation by the authorities. The patients were taken to the isolation hospital.

Sanitary Stations

The national department of health is completing the establishment of sanitary stations in Jujuy, Catamarca and La Rioja. In spite of our federal form of government, the national government has been compelled to take charge of elementary measures of public health in those provinces.

Medical Schools

A considerable improvement has been noticed already in discipline and organization in the medical schools. The medical school at Rosario is already operating regularly, although not completely equipped. Its progress has been hampered by the fact that several professors live at Buenos Aires, 300 kilometers (180 miles) away, going there only to give their classes and returning immediately. Among them there is a professor receiving $1,500 a month, a salary so far never paid by any school in this country. This professor, however, is giving at the same time classes in the School of Pharmacy of Buenos Aires and in the Medical School of La Plata, a town 60 kilometers (37 miles) away from Buenos Aires and 360 kilometers (223 miles) from Rosario. The worst part of it is that he is teaching physiology and, through his filling all these chairs, he prevents the advancement of their laboratories and keeps other competent persons from becoming professors.

AMSTERDAM

(From Our Regular Correspondent)

March 5, 1922.

The Mortality in the Netherlands in 1920

The Central Bureau of Statistics recently published a report on the mortality in the Netherlands according to the age of the inhabitants and the causes of death. It contains some points of general interest. The average mortality rate was 11.99 per thousand of population, the lowest figure recorded for many years. It is interesting to note that the rate has been decreasing steadily since 1870, in which year it was 24.80 per thousand. At this time, the mortality rate was higher in the large cities than in the country. About 1878, the rate in the towns and among the rural population became practically the same, and since that time, while the mortality rate for the country districts did not change, that of the large cities continued to diminish, and in 1920 reached the low figure of 10.27 per thousand. The question arises whether we may regard these data as the tangible results of a sane application of the laws of hygiene and of social medicine.

The average mortality rate for children was 7.28 per thousand. As in other countries, it may be noted that in winter the deaths are caused mainly by respiratory affections and in summer by gastro-intestinal diseases. Just as the general mortality rate, so the child mortality rate has been plainly and steadily decreasing since 1875.

Tuberculosis was the cause of 9 per cent. of the deaths, the rate for women being considerably higher than for men.

Cancer was responsible for 9.39 per cent. of the deaths. The contagious diseases may, for practical purposes, be summed up under typhoid fever, scarlet fever, measles, diphtheria and whooping cough. There were 133 cases of cerebrospinal meningitis, and fifty cases of smallpox. Another interesting fact was brought out by the statistics: the percentage of persons dying without having received medical attention during their last illness is also decreasing steadily. From 1905 to 1909, 6.8 per cent. of the deaths took place without the patients having had recourse to medical care; from 1910 to 1914 the number was 5.3 per cent.; from 1915 to 1919, 3.9 per cent., and in 1920, 3.5 per cent.

Campaign Against Tuberculosis

A royal decree just issued expresses approval of the constitution of the Nederlandsche Centrale Vereeniging tot bestryding der tuberculose (Netherlandic central association for the campaign against tuberculosis). The association outlines the purposes of the organization as: (1) the formation of a union between the various societies and the various groups that are concerning themselves in the Netherlands with the campaign against tuberculosis; (2) discussions and elaboration of better means for the advancement of the campaign, and (3) public and private propaganda by the organization of courses, scientific investigations and popular lectures.

The organ of this central federation has just published a statistical report on the tuberculous persons in the Netherlands, the number of which reaches 16,259. The number of women suffering from the disease is considerably larger than that of the men: 9,069 as compared with 7,190. But the inquiry did not bring out a complete response, only 40 per cent. of replies being received. We may conclude, therefore, that for the whole country the figure given should be multiplied by 2½. The number of cases that justify treatment in the sanatoriums is estimated at 7,000.

Tour of Hospitals by Glee Club

The Glee Club of the University of Leyden is planning to make a tour of the Netherlands in April with a view to giving concerts in the principal hospitals and sanatoriums.

Course in Hygiene at Utrecht

The Central Laboratory of Hygiene of Utrecht is planning to organize in the near future a series of courses, intended exclusively for physicians, on some of the important questions of hygiene and social medicine. These courses will be given under the direction of Professors Aldershoff, Broers, Baart de la Faille, van Loghem and Terburgh. They will comprise—besides practical exercises on serology, bacteriology and protozoology—lectures on legislation pertaining to hygiene, social prophylaxis, occupational diseases, contagion, infection, and the control of epidemic diseases.

BERLIN

(From Our Regular Correspondent)

Feb. 18, 1922.

Waldeyer's Hands

As mentioned in a former letter, the Berlin anatomist Wilhelm Waldeyer stipulated in his will that his brain was to be turned over to his successor, Professor Fick, for examination, and that his hands were to be given to Prof. H. Virchow (a son of Rudolph Virchow), who had been his prosector for many years, for dissection. "My children will not take it amiss that their father, who is an anatomist body and soul, makes this disposition." These words will be better understood when I state that Waldeyer's family, as was he also, is Catholic, and that one of his daughters (the wife of the Cologne surgeon Professor Tilman) is strictly orthodox, and therefore would, of course, be much grieved over the disposition her father made of his body. The examination of Waldeyer's brain, in consequence of the many difficulties involved, will require considerable time, but the examination of the hands has been completed, and Professor Virchow recently presented a report to the Berlin Anthropological Society on the results. He carried out his researches in accordance with a method worked out by himself and doubtless used by him exclusively. He calls his method "preparation according to form." Preparation according to form is accomplished by hardening the soft parts by injecting a solution of formaldehyd into the blood vessels and afterward enclosing the hands and forearms in a plaster-of-Paris cast. Then the soft parts are carefully removed and replaced by plaster-of-Paris paste as the bones are dissected free. By means of this method, which Virchow worked out originally in connection with his activities as teacher in the Art Academy, it is possible to demonstrate the exact position of the bones in the tissues and to show to what extent the form of all parts of the human body is determined by the underlying skeletal bones. But also scientific questions may be solved by this method. Waldeyer stipulated that his hands should be compared one with the other, and refers to his right hand as his "writing hand." That Waldeyer, even up to the time of his death, wrote a firm and beautiful hand, is known to all who have ever seen his letters and manuscripts. From photographs that Virchow presented it could be clearly seen that the right hand must have written a great deal. The effect that much writing had had on the right hand was brought out even more plainly by the changes that had been produced by chronic arthritis, from which Waldeyer suffered. The joints that were most used were found to be most abraded, from which fact we must not conclude that these were more affected by arthritis. In the left hand it could be plainly noted that the ulnar side had been used as a support. Whether further researches on the bone structure will corroborate the previous findings, remains to be seen. It appears somewhat doubtful whether other anatomists will share Virchow's opinions in regard to Waldeyer's "writing hand."

The Physicians of Germany in 1921

In the *Deutsche medizinische Wochenschrift* **48**:166 (Feb. 2) 1922, Dr. Prinzing, who is well known as a writer on medical statistics, furnishes his first statistical report, since the beginning of the war, on the number of physicians in Germany and their location. After the beginning of the war, a survey of the distribution of physicians was, of course, impossible, since most of the physicians were serving in the army medical corps. But also since the war it has been impossible to obtain for publication complete statistics, for the reason that political conditions in Germany have been so upset, and also owing to the fact that changes in territorial limits have been numerous in connection with the carrying out of the terms of the Versailles peace treaty. Then again, on account of the enormous increase in the cost of printing, the *Aerztekalender*, which were formerly relied on, in great measure, for the furnishing of information in regard to the movements of physicians in the various parts of the country, have not appeared of late. The so-called "Personalkalender" of the Leipzig *Aerzteverband* has now reappeared, for the first time since the war, but, for the reasons cited above, its statements can hardly be regarded as fully reliable, and Prinzing's calculations, which are based on these, can be considered as only approximately correct. In spite of this fact, his findings have for us a general interest. The present population of Germany is put at 60,412,084, which appears to be too high an estimate. The total number of physicians in Germany is placed at 36,186, or virtually six to every 10,000

inhabitants. The number of medical students (including those who were mobilized) for the period 1913 to 1921 was as follows:

Year	Men and Women — Summer Semester	Men and Women — Winter Semester	Number of Women — Summer Semester	Number of Women — Winter Semester
1913	14,750	14,999	773	847
1914	15,920	13,312	1,027	1,004
1915	13,803	14,239	1,145	1,162
1916	14,981	15,690	1,364	1,446
1917	16,331	17,316	1,633	1,785
1918	18,162	18,380	1,982	1,983
1919	20,497	19,235	2,059	2,084
1920	18,853	16,645	2,096	1,869
1921	15,870	.....	1,937	.....

It will be seen that the number of women students has more than doubled since 1913. Germany counts within its borders today forty-four cities, in which the proportion of physicians to the total population is as follows:

	Population	Total Number of Physicians in 1921	Number of Physicians to Each 10,000 of Population
Forty-four cities	15,169,000	15,989	10.5
Remainder of Germany	45,223,000	20,288	4.5

For the purpose of comparison, we give the number of physicians to each 10,000 inhabitants during the two years preceding the war:

	Number of Physicians to Each 10,000 of Population 1912	1913	1921
In the large cities	9.5	9.6	10.5
Remainder of Germany	3.7	3.8	4.5

In the twenty-nine communes of which Greater Berlin is composed, the number of physicians per capita, the population being estimated at 3,800,000, for the years 1910, 1912, 1913 and 1921 was:

Year	Total Number of Physicians	Number of Physicians to Each 10,000 of Population
1910	3,894	11.1
1912	4,032	11.1
1913	4,151	11.1
1921	4,621	12.1

In the other cities of the empire, Wiesbaden stands at the head, for the reason that this city, being a watering place, offers physicians more abundant opportunities for employment. The cities next in order in their proportion of physicians are all university towns, for now Frankfort-on-the-Main, which has always had a large number of physicians, has also become the home of a university. The increase in the number of physicians in Munich has been exceptionally great. The smallest percentage of physicians for the cities is found in the large manufacturing towns of the Rhine Province and Westphalia, which was also true before the war. There has been a striking decrease in the percentage of physicians to the population in Kiel, Cologne, Leipzig and Saarbrück.

Marriages

ALFRED ERVIN SMITH, Chicago, to Miss Miriam Helen Mitchell of Kansas City, Mo., at Chicago, March 11.

F. LESLIE JENNINGS, Baltimore, to Miss Hazel May Baer of Waynesboro, at Chester, Pa., February 27.

VICTOR C. SMITH to Miss Beulah Roth, both of New Orleans, at Forest Hills, L. I., recently.

FREDERICK ROMAN SANDERSON to Miss Margaret Madden, both of Rochester, Minn., in January.

WILLIAM E. GALLAGHER, Akron, Ohio, to Miss Ray Rieger of Niagara Falls, N. Y., January 29.

WALDO A. SCHAEFER, Galena, Ill., to Miss Ida Elizabeth Shand of Springfield, Ill., March 18.

JULIUS I. MANDEL to Miss Frieda Okun, both of Chicago, February 7.

Deaths

James Woods Babcock ● Columbia, S. C.; Medical School of Harvard University, Boston, 1886; died, March 4. Dr. Babcock was born in Chester, S. C., Aug. 11, 1856; received his A.B. from Harvard University, 1882; former president of the National Association for the Study of Pellagra; for the past ten years proprietor of the Waverley Sanitarium, Columbia; chairman of the South Carolina State Hospital Commissions; member of the Columbia Board of Health; professor of psychiatry, Medical College of the State of South Carolina, 1915; member of the American Medico-Psychological Association and the South Carolina Historical Society. He published monographs on insanity, and wrote, with C. H. Lavinder, the first treatise on pellagra in English.

Frederick Renner, Nebraska City, Neb.; University of Paris, France, 1851; founder and editor of the *Nebraska Staats Zeitung;* member of the Nebraska territorial legislature, and of the constitutional convention of 1864; captain of the Nebraska militia during the Indian campaigns from 1862-1864; collector of internal revenue, 1867-1870; first president of the Nebraska Territorial Pioneers Association; died at the home of his daughter, at Helvey, Neb., February 5, from senility, aged 92.

Bennett Bernard Browne, Baltimore; University of Maryland School of Medicine, Baltimore, 1867; member of the Medical and Chirurgical Faculty of Maryland; professor of gynecology, Women's Medical College of Baltimore, since 1882, and in the Polyclinic and Postgraduate Medical School, since 1885; veteran of the Civil War; member of the American Gynecological Society; historian for the Society of Colonial Wars; died, March 10, aged 79, from senility.

Frederick Angier Spafford ● Flandreau, S. D.; Dartmouth Medical School, Hanover, 1879; secretary of the South Dakota State Medical Association; member of the board of regents, University of South Dakota College of Medicine, Vermilion; served during the World War as senior medical advisor of the state; Indian Service; died recently, aged 66, from heart disease.

William Charles Barber, Annandale, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1888; superintendent of the Sanatorium for Treatment for Nervous Diseases, Annandale; professor of mental diseases, Queen's University Faculty of Medicine, Kingston, 1911; died recently, aged 59, from heart disease.

William Fairthorne Lehman, Chester, Pa.; Jefferson Medical College of Philadelphia, 1883; member of the Medical Society of the State of Pennsylvania; member of the board of education; consulting chief of the obstetrical board, Chester Hospital; died, March 3, aged 62, from general debility.

George Elliott, Toronto, Ont.; Trinity Medical College, Toronto, 1895; former secretary of the Canadian Medical Association; at one time assistant professor in anatomy at the University of Toronto Faculty of Medicine, Toronto; died, February 21, aged 57, from arteriosclerosis.

Corelli Collard Field, Winnipeg, Man., Canada; Trinity Medical College, Toronto, 1894; L., R.C.P. and L., R.C.S. Edinburgh; L., R.F.P.S. Glasgow, Scotland, 1896; associate professor of pediatrics, University of Manitoba, Winnipeg; died, December 28, aged 52, from pneumonia.

James Roland Howell, Pueblo, Colo.; Northwestern University Medical School, 1905; veteran of the Spanish-American War; served in France during the World War, as an infantryman; died, March 7, at the Woodcroft Hospital, aged 44, from pleurisy and lobar pneumonia.

J. D. Bissonette, Stirling, Ont., Canada; Queen's University Faculty of Medicine, Kingston, 1892; member of the school board; former president of the Hastings Medical Association; died, December 31, aged 65, from hemorrhage resulting from gastric ulcers.

Theron James Kinnear ● Springfield, Ill.; Northwestern University Medical School, Chicago, 1904; specialized in ophthalmology, otology, laryngology and rhinology; died, February 28, aged 45, at St. John's Hospital, following an operation for a furuncle.

● Indicates "Fellow" of the American Medical Association.

Charles Arthur Beebe, Fond du Lac, Wis.; Western Reserve University School of Medicine, Cleveland, 1882; former president of the city council and board of education of Fond du Lac; died, March 6, aged 68, at Chicago, from pneumonia.

Robert Elgin Buchanan ● Independence, Iowa; Rush Medical College, Chicago, 1883; formerly superintendent of the Yankton State Hospital, Yankton, S. D.; at one time mayor of Parker, S. D.; died, March 10, aged 67, from myocarditis.

Walter Elbirth Clay, Mt. Carroll, Ill.; St. Louis College of Physicians and Surgeons, St. Louis, 1897; served during the World War, M. C., U. S. Army; died, February 26, aged 52, at a hospital in Chicago, from pneumonia.

Henry Anthony B. MacCauley, San Francisco; Medical Department of the University of the City of New York, 1888; physician for the Commercial Cable Company; died recently, at Midway Island, in the Pacific Ocean, aged 56.

Marit F. Nelms, Commerce, Ga.; Atlanta College of Physicians and Surgeons, 1900; member of the Medical Association of Georgia; died, February 16, at the Wesley Memorial Hospital, Atlanta, from spinal meningitis, aged 50.

Frank M. Agnew, Makanda, Ill.; Medical College of Ohio, Cincinnati, 1862; Miami Medical College, Cincinnati, 1866; member of the Ohio State Medical Association; also a minister; died, March 10, at Carbondale, Ill., aged 81.

Harry Meredith Dale, Los Angeles; State University of Iowa College of Medicine, Iowa City, 1894; member of the Medical Society of the State of California; died recently, aged 54, from influenza and cerebral hemorrhage.

Albert Algernon Marrett, Constance, Ky.; University of Louisville Medical Department, Louisville, 1874; for nearly thirty years coroner of Boone County, died, March 1, at St. Elizabeth's Hospital, Covington, Ky., aged 77.

James H. Miller, Antlers, Okla.; Kansas City (Mo.) Medical College, 1892; banker and retired physician; was found dead in bed, February 18, with a bullet wound in his head, presumably self inflicted, aged 66.

Cassius M. C. Campbell, Oakmont, Pa.; Jefferson Medical College, Philadelphia, 1879; former member of the state legislature; at one time member of the Oakmont school board; died, February 22, aged 66.

William Lawrence Mauldin, Jr. ● Greenville, S. C.; College of Physicians and Surgeons, Baltimore, 1901; formerly county physician and member of the city police commission; died, March 3, aged 43.

Elma C. Griggs, Ithaca, N. Y.; Hahnemann Medical College and Hospital, Chicago, 1888; medical examiner, Sage College, Cornell University; died, February 24, aged 56, in New York City.

John Attig Burgoyne, Columbus, Ohio; Starling Medical College, Columbus, 1895; member of the Ohio State Medical Association; died, February 23, aged 50, from bronchopneumonia.

J. Judd Miller, Norfolk, Va.; Medical College of Virginia, Richmond, 1898; member of the Medical Society of Virginia; city coroner; died, February 20, aged 50, from lymphatic leukemia.

Julien Trist Bringier, Burnside, La.; Tulane University of Louisiana School of Medicine, New Orleans, 1888; member of the Louisiana State Medical Society; died, February 15, aged 60.

Joseph O. McElroy, Hickory, Pa.; University of Wooster Medical Department, Cleveland, 1869; member of the Medical Society of the State of Pennsylvania; died, February 22, aged 86.

Alonzo E. Clough, Madison, S. C.; College of Physicians and Surgeons, Keokuk, Iowa, 1878; formerly served as chairman of the Republican state committee; died, February 26.

Louis Kosuth Stock, Terre Haute, Ind.; Eclectic Medical Institute, Cincinnati, 1882; proprietor of the Vigo Sanatorium; member of the city council; died recently, aged 68.

Reed McColloch Baird, Wheeling, W. Va.; Medical School of Harvard University, Boston, 1882; died, February 28, aged 64, at the Ohio Valley General Hospital, from paresis.

Henry D. Wells, Middleburg, Ky.; Albany Medical College, Albany, 1857; member of the Medical Society of the State of New York; died, February 25, aged 92, from senility.

Millard F. Decker, Comanche, Okla.; Barnes Medical College, St. Louis, 1904; member of Oklahoma State Medical Association; died suddenly, December 29, aged 55.

Alfred James Henwood, Brantford, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., 1879; formerly surgeon on a transatlantic steamer; died, January 20, aged 56.

Nathaniel Leander Berry, Jr. ● North Whitefield, Me.; Medical School of Harvard University, Boston, 1903; died, February 22, aged 41, from heart disease.

Alfred S. Rixey, Culpepper, Va.; Jefferson Medical College, Philadelphia, 1882; member of the Medical Society of Virginia; died, February 28, aged 61.

William C. Pendergraft ● Hollis, Okla.; St. Louis College of Physicians and Surgeons, St. Louis, 1892; died, February 20, aged 56, following a long illness.

William Thomas Reeve, Boerne, Texas; Fort Worth School of Medicine, 1900; served five terms as mayor; justice of the peace; died, February 19, aged 67.

Samuel A. Gotcher, Chicago; St. Louis College of Physicians and Surgeons, St. Louis, 1901; died, March 6, from tumor of the brain, aged 55.

Christian P. K. Dencker ● Chicago; Rush Medical College, Chicago, 1906; died, March 12, aged 55, from heart disease following a motor accident.

William D. Jennings, Augusta, Ga.; Atlanta Medical College, Atlanta, 1868; father of three physicians; died, February 28, from pneumonia.

George Earle Moore, Ironwood, Mich.; Rush Medical College, 1883; member of the Michigan State Medical Society; died, March 3, aged 65.

Charles Dunsford Jenkins, Boston (licensed, Massachusetts, years of practice); author of several medical books; died recently, aged 74.

Frederick J. Weidenhammer, Waterloo, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1905; died in December, aged 53.

Harrison Willis Maltby ● Chicago; University of Illinois College of Medicine, Chicago; died, January 17, aged 45, from diabetes mellitus.

Ernest A. Bradbury, Barre, Vt.; Beach Medical Institute, Indianapolis, 1885; died, February 26, aged 62, from heart disease and senility.

Augustus H. Schott, St. Louis; Homeopathic Medical College of Missouri, St. Louis, 1879; died, February 23, aged 72, from pneumonia.

William H. Banks, Waymansville, Ind. (licensed, Indiana, 1897); veteran of the Civil War; died, March 2, aged 84, from influenza.

Jesse A. Hunter, Miller, Ind.; Eclectic Medical College, Cincinnati, 1897; died, February 27, aged 60, at a hospital in Crown Point.

William Sloan, Toronto, Canada; Victoria University Medical Department, Victoria, 1865; died, December 25, aged 90.

William Hall, Brampton, Ont., Canada; McGill University Faculty of Medicine, Montreal, 1887; died recently from diabetes.

Winona E. Long, Battle Creek, Mich.; University of Arkansas, Little Rock, 1909; died, March 10, from pellagra, aged 36.

Emma J. Collop Fitch, Indianapolis; Medical Department, University of Indianapolis, 1901; died, February 27, aged 44.

Thomas Canning Church, Valley Falls, N. Y.; University of Michigan, Ann Arbor, 1878; died, February 16, aged 66.

Frederick Fraser McEwen, Aylmer, Ont., Canada; University of Toronto Faculty of Medicine, 1905; died recently.

Henry David Peterson, Millersburg, Ky.; Eclectic Medical Institute, Cincinnati, 1892; died, February 21, aged 67.

Frank Vail Martin, Pittsburgh; Western Pennsylvania Medical College, 1899; died, February 27, aged 54.

Wesley Melick, Nevada, Mo.; University of Pennsylvania, Philadelphia, 1857; died, February 23, aged 92.

George C. Howlette, Atkinson, Ill.; Chicago Homeopathic Medical College, 1880; died recently, aged 64.

Homer Mason, Toronto, Canada; Trinity Medical College, Toronto, 1889; died, February 4, aged 57.

George E. Hall, Chicago (license, Illinois, years of practice); died, March 10, aged 88.

Samuel A. Kennedy, Indianapolis (license, Indiana 1897); died, February 20, aged 92.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

ALBERT ABRAMS, A.M., M.D., LL.D., F.R.M.S.

"Spondylotherapy," "Electronic Reactions," the "Oscilloclast," the "Electrobioscope," Etc.

For some time THE JOURNAL has received inquiries of which the following recent examples are typical. This from an Ohio physician:

"Please give me some information concerning Dr. Abrams and his diagnostic and therapeutic devices known as reflexaphore and oscilloclast. If this is published please withhold my name."

A physician in Massachusetts writes:

"Can you give me any information concerning Dr. (?) San Francisco, California, who reports himself able to diagnose syphilis from a drop of blood sent him on a blotting paper. He has caused a patient of mine a great deal of needless worry."

And from Rhode Island a physician facetiously inquires:

"I am interested to know of the 'Reactions of Abrams.' Have you any information that you can give me in regard to this matter? They apparently do wonderful things in the West."

While a New York physician acknowledges his failure to keep up with the times thus:

"To-day I had occasion to see a patient who mentioned having an Abrams test for gonorrheal infection of the prostate. He also stated he wished to have Abrams' treatment for the same condition. Could you enlighten me as to what these are? I thought I had kept myself up to date as to all new tests and treatments in my line; but evidently I have been delinquent."

According to our records, Albert Abrams, A.M., M.D., LL.D., F.R.M.S., was born in San Francisco in 1864. He was graduated in medicine by the University of Heidelberg, Germany, in 1882. Dr. Abrams is a member of his local medical society and through that holds fellowship in the American Medical Association. Dr. Abrams has written voluminously. In 1910, his book on "Spondylotherapy" ("Physio-Therapy of the Spine") was reviewed in THE JOURNAL. "Spondylotherapy" is a neologic creation of Dr. Abrams. According to its disciples, it concerns itself *"only* with the excitation of the functional centers of the spinal cord" and has been called "the science of evoking the reflexes of the body both to diagnose and to cure disease." In bringing its review of Abrams' book on "Spondylotherapy" to a close, THE JOURNAL said:

". . . one wonders whether this is an attempt to explain osteopathy and chiropractic to the understanding of the regular practitioner, or to exploit the very ingenious percussion devices of the author, or whether it is really true that medical men really know practically nothing about the cure of disease through treatment of the spine. Let us hope that it is the latter and that a careful study of this unique volume may open new avenues of therapy heretofore undreamed of."

While the review was obviously critical, yet in advertising the book, the publishers picked out part of the closing sentence, omitted the context, and quoted THE JOURNAL as having said:

"Let us hope that a careful study of this unique volume may open new avenues of therapy heretofore undreamed of."

When this matter was brought to the attention of Dr. Abrams, he replied, "I fail to see any real difference in the two quotations" and "only one . . . with an astigmatic mentality" could "see any incongruity between the context and the concluding sentence." Yet, in this same letter which attempted to justify the garbling of a quotation so as to make a critical review appear a laudatory one, Dr. Abrams declared that the review in question was "conceived and executed in a malicious spirit."

Between 1912 and 1914 Dr. Abrams gave "clinical courses" on "Spondylotherapy" in various parts of the country—price $50. These "courses" were widely advertised by an Ohio concern that seems to make a specialty not only of handling the advertising campaigns of those members of the medical profession who have unusual or bizarre methods to exploit, but also of acting as an agent for the sale of such devices and publications as may be necessary to the proper practice of the particular brand of therapy that is being exploited. At the time this concern was featuring Abrams' course it called attention to the alleged fact that "no class were [*sic!*] so busy as those employing mechanical treatment such as Osteopathy, Chiropractic, Mechanotherapy, etc."

Says Dr. Abrams:

"Despite the fury of tongue or the truculence of pen, the osteopath and chiropractor are inspiring the confidence of the community with their systems. Right or wrong in their theory, they are, in vulgar parlance, 'delivering the goods.' Spondylotherapy was a product of necessity — the translation of an ignored field of medicine from a chaotic to a scientific basis."

Possibly the following testimonial published by Dr. Abrams as typical of many received, and credited to "Dr. Henry Stacy Dodge, Richmond, Va.," may explain the field that "Spondylotherapy" is to cover. Incidentally, "Dr." Dodge is listed in the Richmond telephone directory as a chiropractor:

"I have been in practice for fifteen years in Chiropractic and ten years an Osteopath and I wish to say that during the last three years, I have received more genuine and sincere satisfaction from the application of Spondylotherapy than all other methods combined. My success in gastrology alone is worth many times the cost of the information."

More recently, Dr. Abrams has advertised that he gives a "course" in Spondylotherapy in San Francisco, beginning on the first of each month. The course last four weeks. "The honorarium for this course is $200.00."

In 1912 an organization was created devoted to this new therapeutic method: the "American Association for the Study of Spondylotherapy." Later Dr. Abrams was made Honorary President. Whether the organization is still viable we do not know.

ELECTRONIC REACTIONS OF ABRAMS

In addition to "Spondylotherapy," Dr. Abrams has also evolved what he calls the "Electronic Reactions of Abrams." These are said to make possible long-distance diagnoses, it being necessary only to send a few drops of blood taken from the patient and allowed to dry on a slide. There are, it seems, certain instruments and devices used in the performance of these diagnostic feats. By means of the "Electronic Reactions" Dr. Abrams (while admitting the protective factor of vaccination against smallpox) has discovered that practically all the vaccines obtained from reliable firms yield the reaction ("electronic tests") of congenital syphilis, and that many of them also yield the reaction of tuberculosis and of streptococci and staphylococci. Further, "from the cicatrices of all vaccinated persons, one can always elicit a reaction of congenital syphilis and in early scars a tuberculous reaction." Dr. Abrams also declares that exposing vaccine virus for ten minutes to blue light will destroy the syphilitic, streptococcic and staphylococcic reactions and exposing it for the same period to yellow light will destroy the tuberculous reaction.

One of Dr. Abrams' disciples—Sir James Barr—frequently quoted with evident satisfaction, declares that from a fresh sample of blood spread over four square inches of white blotting paper, "Dr. Abrams can diagnose the sex, race and disease of the patient." However, there are certain precautions that must be taken: The patient should face West, "the blood should be taken in a subdued light and there should be no strong red or yellow coloring material in the room."

In various places Dr. Abrams has asseverated that "if splanchno-diagnosis is approached with a prejudiced mind, it is better not to attempt it, for there are 'none so blind as those that will not see'."

Dr. Abrams founded and edits *Physico-Clinical Medicine.* It is published by "Physico-Clinical Co." at 2135 Sacramento St., San Francisco—the address, according to the telephone directory, of Dr. Abrams' residence. It is a quarterly "Devoted to the Study of the Electronic Reactions of Abrams and the Visceral Reflexes of Abrams, in the Diagnosis,

Treatment and Pathology of Disease." Single copies, one dollar; by the year, two dollars. The publication is, apparently, not entered as second class matter, in fact, presumably, it could not be, as it seems obviously to be an advertising affair. Each issue contains material dealing with "Spondylotherapy," "Splanchno-Diagnosis," "Electronic Reactions" and other discoveries and theories of Dr. Abrams. In it also is published a list of "Some recent visitors at Dr. Abrams' laboratory," the names and addresses of the "Lessees of Oscilloclast" (about which more later), testimonials for Dr. Abrams, etc.

Of course, it carries advertisements of Dr. Abrams' "Physico-Clinical Laboratory" (also at 2135 Sacramento St.) and his "Practical Courses in Spondylotherapy and Electronic Diagnosis and Treatment" ($200 in advance). Some of the devices of Dr. Abrams are also advertised. "No apparatus sold on credit. Terms cash." Among these are:

"Dr. Abrams' Electrodes for Electronic Diagnosis..$ 6.00
"Biodynamometer 36.00
"Dr. Abrams' Reflex Set 36.00
"Dr. Abrams' Electro-Concusser.....120.00"

THE OSCILLOCLAST

But what seems to be the outstanding piece of apparatus, devised or invented by Dr. Abrams, the pièce de resistance, as it were, of physicoclinical diagnosis and treatment, is the "Oscilloclast."

This device is not for sale. It can be had only on lease. The first payment is $200 or $250, according to whether it is wired for alternating or direct current. Then there is a monthly payment of $5. Dr. Abrams publishes a list of more than 130 men who have leased one or more "Oscilloclasts." Sir James Barr's name heads the list. According to Dr. Abrams, the "Oscilloclast" owes its conception to the therapeutic principles he advocates. These, in part, are:

"1. Physiologic phenomena are manifestations of electronic energy.

"2. Pathologic phenomena are manifestations of perturbed electronic energy.

"3. The energy in health and disease has an invariable and definite rate of vibration (determinable by the electronic reactions).

"4. Specific drugs possess a like vibratory rate as the diseases for which they are effective.

"These like vibratory rates (homovibrations) of drugs owe their efficiency to their inherent radioactivity. Thus, an obsolete drug like gamboge painted on the chest in incipient tuberculosis will effect a symptomatic cure within a few weeks. Gamboge possesses the same vibratory rate as tuberculosis. Our conception that drug action is dependent on direct cellular contact is thus demolished. . . .

"5. All forms of energy whether derived from heat, electricity or magnetism may be made to yield different rates of vibration and these rates corresponding to the diseases are utilized for their destruction."

If one accepts one of Dr. Abrams' theories, the possibilities of such a piece of machinery as the "Oscilloclast" would seem to loom large, not only in therapeutics, but also in economics. All one needs to do, according to Dr. Abrams, is to ascertain "the vibration rate of a drug" and then to substitute the same vibration as produced by the "Oscilloclast." Thus, if one substitutes the "vibratory rate of atropin" for the drug itself "the mouth dries or the subject feels as if it were puckered." Conversely, if you switch the "Oscilloclast" to the pilocarpin vibratory rate, there is a copious flow of saliva.

THERAPEUTIC RESULTS WITH OSCILLOCLAST

What some of the lessees of the oscilloclast are accomplishing (if we are to believe the clinical reports published in *Physico-Clinical Medicine*) may be gathered from the following quotations:

"Woman, Age 52.—Diagnosis of acquired syphilis made by one of our most eminent clinicians. (?) Abrams test showed tuberculosis of the apex of the right lung. No syphilis. Fourteen treatments with the Oscilloclast at 5. Patient gained fourteen pounds in three weeks. Now in perfect health."

"Mechanic, Age 22.—Acute acquired syphilis. General eruption, throat, mouth symptoms and chancre. Thirteen treatments with the Oscilloclast at 3, and splenic sterilization only. Complete abatement of all symptoms."

"Woman, Age 42.—Strep infection of the second upper cuspid tooth of three years' standing. Well developed sinus. Regular discharge of pus. Eight treatments with the Oscilloclast at 2. Clinically cured."

"Cancer of the pylorus and pylorectomy executed at the Mayo Clinic. Later, vomiting, severe pains, loss in weight, etc. After the third treatment [with "Oscilloclast"] pains ceased and, after 14 treatments, she was well and continued so when I last saw her."

"Cancer of uterus. Inoperable. Severe uterine hemorrhages. Electrode of Oscilloclast to cervix and hemorrhage ceased after second treatment. After 14 treatments the patient declared she was well. Another case of the same character was followed by equally good results."

ECONOMIC RESULTS WITH OSCILLOCLAST

It also seems to be a great business-getter, as the following testimonials published by Dr. Abrams show:

"The Oscilloclast has doubled my business."—S. King, M.D. (Pa.)."

"I am doing good work with the Oscilloclast in T. B. and when I get more room I shall want another machine."—H. Michener (Kas.)."

"We are swamped with work and our three cord Oscilloclast is working to full capacity. We are still astonishing the incredulous and keeping busy. We must have another Oscilloclast at once for there are so many here who demand treatment."—W. P. Myers, M.D. (Cal.)."

THE ELECTROBIOSCOPE

More recently, Dr. Abrams has extended his observations and experiments, using what apparently is a modification of the old fashioned pith ball suspended by a silk thread from a rubber rod with which we all experimented during our high school days. This device Dr. Abrams has called the "Electrobioscope." It is for sale by the Physico-Clinical Co. The "Electrobioscope," in addition to doing many other things, has demonstrated (to Dr. Abrams) the "sexuality of numbers and sounds." Thus, if the pith ball is charged negatively and the numbers 1 to 9 are marked on a narrow board and the vowels and consonants are marked on another board, it will be found—still according to Dr. Abrams—that even numbers repel the pith ball while odd numbers attract it. Vowels repel and consonants attract. "A female hair repels and a male hair attracts." From these data Dr. Abrams deduces that "even numbers and vowels are female and odd numbers and consonants are male."

The value of music as a therapeutic agent is briefly touched on by Dr. Abrams and we are told that the overture of "Tannhäuser" will increase the pulse rate whereas "Meditation" diminishes blood pressure and pulse rate. "In dogs, music augments elimination of carbonic acid and increases the consumption of oxygen." Love, says Dr. Abrams, "is dependent upon matter in vibration and the passional component has a wave metric index of 14 in both sexes." In referring to legendary lore, Dr. Abrams apparently assigns a scientific basis for the belief among the bucolic that carrying around a potato has therapeutic virtue. Thus:

"A cut potato (carried on the person) prevents elicitation of the stomach reflex when the negative pole of a bar-magnet is presented to the stomach region whereas the positive pole will evoke dulness."

It seems also that the "rheumatic rings" of iron "when worn yield a neutral energy which prevents the elicitation of the stomach reflex by either pole of a bar-magnet." We learn, too, that the divining rod "no longer belongs to occultism but is entitled to consideration as a scientific fact."

Dr. Abrams also has investigated methods whereby the sex of the fetus may be diagnosed. In the human these investigations have, apparently, been so limited as to permit only tentative conclusions. In the case of eggs of the domestic fowl, Dr. Abrams reports that with four eggs that yielded negative polarity, the result of incubation was four hens. Of five eggs yielding a positive polarity only two hatched, one was a hen and one a rooster, giving an "error in observation." Three eggs tested yielded neutral polarity and "as predicted the eggs were sterile." In case of an egg yielding a negative (female) polarity "an attempt was made to reverse the sex by painting one end of the egg with a yellow coloring material." The result was a rooster.

Much more might be written about, what one of our correspondents calls, the wonderful things they are doing in the West, but space forbids. "Neither the fury of tongue," says Dr. Abrams in the preface to his book, New Concepts in Diagnosis and Treatment, "nor the truculence of pen can discredit the author's observations which are capable of analyzation and demonstration." If there is any scientific foundation for the marvels that Dr. Abrams so picturesquely features, the scientific world has not yet found it out!

Correspondence

"WHAT OUGHT THE UNITED STATES PHARMACOPEIA TO CONTAIN?"

To the Editor:—As chairman of the Subcommittee on Scope of the present Revision Committee, may I be permitted to point out certain inaccuracies in the article by Dr. Osborne (THE JOURNAL, March 4, p. 639).

First, the final decision as to the admissibility of therapeutic agents now rests solely in the hands of the medical members of the committee.

Second, Dr. Osborne gives a list of "substances recommended for deletion because they cannot be standardized." On this list are a number of substances which both can be, and are, standardized. Many urgently require standardization; for instance, if there were no legal standard for distilled water, pharmacists would be at liberty to employ any kind of water, which in case of certain drugs—as silver nitrate—might have serious influence on the final result of the prescription. Again, when we remember what a variety of substances are sold under the name of soap, some of them containing free alkali, some containing various irritant fatty acids or poisonous coloring matters, and when we remember that soap is an ingredient in compound cathartic pills and other preparations for internal use, it appears that soap is in much need of pharmaceutic standardization. What Dr. Osborne means by the expression "cannot" be standardized is a little obscure. Why a standard for flaxseed (linum) is any less explicit or enforceable than a standard for strophanthus seed does not appear obvious. Of the list of substances which he says cannot be standardized, the great majority *are* standardized.

Third, in regard to the spices, there is room for difference of opinion as to which are of sufficient therapeutic importance to justify recognition; but to dismiss them all cavalierly with the statement that "such aromatic oils as are needed may be listed" seems to be going too far. For instance, oils of capsicum and of ginger are neither commercial articles nor therapeutically active. I myself greatly prefer powdered mustard seed as a counterirritant to the oil of mustard. (Incidentally, Dr. Osborne later dismisses mustard oil.) It should be remembered that there are few substances on the market more freely adulterated than the spices. If they have therapeutic uses, which I believe some of them do have, they require standardization.

Fourth, Dr. Osborne gives a long list of drugs and preparations that he believes are therapeutically undesirable. Such expressions of personal views may be of value if collected from a large number of sources, but Dr. Osborne makes the very common mistake of forgetting that the Pharmacopeia is the legal standard for drugs from the Philippines to Cuba and from Alaska to Florida, and that the citizen of San Francisco or New Orleans has just as much right to protection from impure drugs as the citizen of New Haven. For example, Dr. Osborne apparently uses sodium bromid in preference to all others; other physicians prefer the ammonium or calcium salt. There are quite a number of drugs on his list that he believes should be deleted which I have used frequently with great satisfaction. He may not like the flavor of anise water, but many persons do, and find it a very useful vehicle. As Dr. Osborne does not specialize in skin diseases, he naturally has little use for sodium thiosulphate or diachylon ointment; but both are widely used by dermatologists.

Another common error into which Dr. Osborne falls is forgetting that substances, not directly valuable themselves as therapeutic agents, are important as the source of widely used drugs. For instance, granulated ferrous sulphate, which he would delete from the Pharmacopeia, is one of the bases of the very popular Blaud's pill; hypophosphorus acid is used in the preparation of syrup of ferrous iodid; lead oxid is an essential in the preparation of solution of lead subacetate, etc. Any assertion that a chemical which enters into a pharmaceutical preparation does not require standardization I cannot assent to. If, for instance, in the manufacture of syrup of ferrous iodid, a hypophosphorus acid was used which was contaminated with barium or oxalic acid (each of which is used in manufacturing hypophosphorus acid) the finished syrup might be highly toxic.

The Subcommittee on Scope realizes that it is impossible to make a pharmacopeia which would meet all of the widely divergent views of the medical profession as to what should be included; but it has striven to reflect the usage of the great mass of the competent physicians of the country.

HORATIO C. WOOD, JR., M.D., Philadelphia.

"SPECIES OF HYMENOLEPIS AS HUMAN PARASITES"

To the Editor.—In his article on *Hymenolepis nana* and *diminuta* as human parasites (THE JOURNAL, March 4), Dr. Chandler referred to eight cases recorded in the United States. In order to have the records complete I am taking the liberty of referring to the investigations by DeBuys and Dwyer in the "Study of the Stools in Children's Institutions Showing the Incidence of Intestinal Parasitic Infections" (*Am. J. Dis. Child.* **18**:269 [Oct.] 1919) in which we included one case of infestation by this parasite, occurring in a girl, aged 3 years. In this child there was a triple infection, consisting of *Hymenolepis diminuta, Trichuris trichiura,* and *Ascaris lumbricoides.* The blood of this little girl showed a 13 per cent. eosinophilia.

L. R. DEBUYS, M.D., New Orleans.

"EFFECTIVENESS OF INFANT WELFARE CLINICS FROM A MEDICAL POINT OF VIEW"

To the Editor:—The manuscript of an article by Dr. Knox and myself with the foregoing caption in THE JOURNAL, March 11, was read by Sir Arthur Newsholme. He made the comment that the value of the data would be improved if the ages of the children "under medical supervision" and of the death rates in the different age periods were given. One would thus be able to determine whether the good results were due to medical supervision or to a selection of children predominantly in the second and third years of life, and therefore with lower death rate expectancy. In a large measure I believe this criticism is met by the following data, which unfortunately were omitted from the original article.

Of 4,366 children making at least three visits to the infant welfare clinics of the Babies' Milk Fund Association of Baltimore, the numbers making their first visit at the time specified were:

	In First Year	In Second Year	In Third Year	Total
White	2,366	277	30	2,673
Colored	1,542	105	46	1,693
Total	3,908	382	76	4,366

The statistics herewith supplied demonstrate the important fact that the physicians of the association first saw the great majority of children "under medical supervision" in the period of greatest vulnerability to disease and when the death rate was highest, i. e., the first year of life. Eighty-nine per cent. of the children in Group 1 (88 per cent. of the white children

and 90 per cent. of the colored children) were first seen in the first year of life. The good results of medical supervision cannot therefore be attributed to the possibility that the children did not come under this medical supervision until they were in the relatively less dangerous second and third years, when the mortality is comparatively low even without medical supervision.

GROVER F. POWERS, M.D., New Haven, Conn.

"BASAL METABOLISM"—A DISCLAIMER OF RESPONSIBILITY

To the Editor:—In a recent publication entitled "Basal Metabolism," by Mr. Frank B. Sanborn of the Sanborn Company, my name has been given a prominence which is neither warranted nor desired. My sole contribution to this book consisted in permitting Mr. Sanborn to copy verbatim an article entitled "The Basal Metabolism in Fever," which appeared in THE JOURNAL, July 30, 1921. I had previously written him, Sept. 9, 1921, saying that I did not desire to revise an article for his book or make any important revisions in my publications, and on Oct. 22, 1921, I wrote saying that I did not desire to be responsible for an abstract of the fever article that he submitted to me. In spite of this he has advertised my name among those who approved abstracts, and has printed my name among the contributors.

On page 25 of his book, Mr. Sanborn has given the normal standards suggested by Dr. Aub and myself, and on page 29 has printed a table entitled "Du Bois Normal Standards of Basal Metabolism with 18 Calories Deducted." I wish to emphasize the fact that the latter table should not bear my name, and repeat what I told Mr. Sanborn that at the present time I do not care to make any important revisions in my publications.

EUGENE F. DU BOIS, M.D., New York.

THE QUALITIES OF THE GRADUATE MEDICAL STUDENT—A CORRECTION

To the Editor:—Please correct the published report of my discussion Monday, March 6, at the meeting of the Congress on Medical Education (THE JOURNAL, March 11, p. 740). Briefly, the two points quoted were: 1. From the standpoint of the graduate school, we can confirm the suspicion that things are not all right with the graduates that are being turned out from the undergraduate schools. Many of them lack individuality. Many of them have a most receptive attitude and very little initiative. Though they may carry a tremendous burden of knowledge of the preclinical branches, much of it is useless since they are unable to apply it in clinical work. This all indicates the great need for better coordination between preclinical and clinical departments. 2. I must protest, however, the proposal to reduce premedical training to a purely utilitarian basis. Every medical graduate, that he may not lack culture, should know something of art and of literature, of music and of history. He should be thoroughly familiar with his own and with at least one other modern language.

LOUIS B. WILSON, M.D., Rochester, Minn.

"A NEW HYSTERECTOMY KNIFE"

To the Editor:—In THE JOURNAL, February 25, Dr. W. E. Darnall described and illustrated "a new hysterectomy knife." For many years I have been using this knife, which was devised by Dr. Howard A. Kelly and is listed by the Kny-Scheerer Company as Kelly's hysterectomy spud.

DR. WOODSON H. TAULBEE, Maysville, Ky.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARIZONA: Phoenix, April 4-5. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

ARKANSAS: Little Rock, May 2-3. Sec., Reg. Bd., Dr. J. W. Walker, Fayetteville.

ARKANSAS: Little Rock, May 9. Sec., Eclec. Bd., Dr. C. E. Laws, 803½ Garrison Ave., Fort Smith. Sec., Homeo. Bd., Dr. Geo. W. Love, Rogers.

COLORADO: Denver, April 4. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DISTRICT OF COLUMBIA: Washington, April 11. Sec., Dr. Edgar P. Copeland, 1315 Rhode Island Ave., Washington.

HAWAII: Honolulu, April 10. Sec., Dr. G. C. Milnor, 401 Beretania St., Honolulu.

IDAHO: Boise, April 4. Director, Mr. Paul Davis, Boise.

ILLINOIS: Chicago, March 27-29. Director, Mr. W. H. H. Miller, Springfield.

MASSACHUSETTS: Boston, May 9-11. Sec., Dr. Samuel H. Calderwood, 144 State House, Boston.

MINNESOTA: Minneapolis, April 4-6. Sec., Dr. Thomas S. McDavitt, 539 Lowry Bldg., St. Paul.

MONTANA: Helena, April 4. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

NEVADA: Carson City, May 1. Sec., Dr. Simeon L. Lee, Carson City.

NEW MEXICO: Santa Fe, April 10-11. Sec., Dr. R. E. McBride, Las Cruces.

OKLAHOMA: Oklahoma City, April 11-12. Sec., Dr. J. M. Byrum, Shawnee.

PORTO RICO: San Juan, April 4. Sec., Dr. M. Quevedo Baez, Box 804, San Juan.

RHODE ISLAND: Providence, April 6-7. Sec., Dr. Byron U. Richards, State House, Providence.

UTAH: Salt Lake City, April 4. Director, Mr. J. T. Hammond, Salt Lake City.

Maine November Examination

Dr. Frank W. Searle, secretary, Maine State Board of Registration in Medicine, reports the written examination held at Portland, Nov. 8-9, 1921. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Three candidates were examined, all of whom passed. One candidate was licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Georgetown University		(1921)	90
Tufts College Medical School		(1920)	78
Washington University		(1915)	83

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Georgetown University		(1921)	Dist. Colum.

Michigan Reciprocity Report

Dr. Beverly D. Harison, secretary, Michigan State Board of Registration in Medicine, reports that, during 1921, seventy-two candidates were licensed by reciprocity. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Cooper Medical College		(1883)	Washington
University of California		(1914), (1916)	California
George Washington University		(1920)	Dist. Colum.
Howard University		(1908)	Penna.
Emory University		(1920)	Georgia
American College of Medicine and Surgery		(1904)	Illinois
Bennett College of Eclectic Medicine and Surgery		(1877)	Illinois
Chicago College of Medicine and Surgery		(1913)	Iowa
Chicago Homeopathic Medical College		(1886)	Illinois
College of Physicians and Surgeons, Chicago		(1907)	Indiana
	(1908), (1909)	Illinois	
Illinois Medical College		(1910)	Tennessee
Northwestern University	(1913), (1915), (1920, 2)		Illinois
Rush Medical College	(1917) Kansas, (1919), (1920)		Illinois
University of Illinois	(1915), (1916, 2)		Illinois
Woman's Medical School of Northwestern Univ.		(1898)	Illinois
Indiana University		(1919)	Indiana
State University of Iowa College of Medicine		(1898)	Wisconsin
	(1919), (1920)	Iowa	
Louisville Medical College		(1904)	Washington
University of Louisville Medical Dept.		(1897)	W. Virginia
	(1916)	Kentucky	
Tulane University		(1919)	Louisiana
Baltimore Medical College	(1895) Massachusetts,	(1907)	New York
College of Physicians and Surgeons, Baltimore		(1912)	Connecticut
Johns Hopkins University	(1913), (1914) Maryland,	(1916)	Indiana
	(1918)	Maryland	
University of Maryland		(1916), (1921)	Maryland
Harvard University	(1873) Oklahoma,	(1901)	Mass.
	(1912)	California	
Tufts College Medical School		(1920, 2)	Mass.
Barnes Medical College		(1903)	Missouri

Beaumont Hospital Medical College	(1897)	Illinois
St. Louis University School of Medicine	(1920)	Missouri
Columbia University	(1917)	New York
Long Island College Hospital	(1914)	New York
University of Buffalo	(1920)	New York
Cleveland Pulte Medical College	(1914)	Ohio
Pulte Medical College	(1897)	Ohio
Starling Medical College	(1896), (1903)	Ohio
Toledo Medical College	(1911)	Ohio
Western Reserve University	(1919), (1920)	Ohio
University of Oklahoma	(1913)	Oklahoma
Hahnemann Medical Coll. and Hosp. of Philadelphia	(1896)	Penna.
Jefferson Medical College	(1901)	Penna.
Meharry Medical College	(1914), (1920) (1920), (1921)	Georgia Tennessee
University of Tennessee	(1914)	Tennessee
Vanderbilt University	(1913), (1917)	Tennessee
Laval University	(1919)	Maine
University of Heidelberg	(1905)	Wisconsin

Book Notices

PSYCHOPATHOLOGY. By Edward J. Kempf, M.D., Clinical Psychiatrist to St. Elizabeth's Hospital, Washington, D. C. Cloth. Price, $9.50. Pp. 762, with 87 illustrations. St. Louis: C. V. Mosby Company, 1920.

Dr. Kempf considers man's behavior in the evolutionary sense, pointing out that the highly developed civilization of man has checked a number of biologic impulses, and established forms of control which are responsible for disordered behavior. His study has been based too largely perhaps on the insane and not sufficiently on the normal mind, for he tends to overstress the abnormal elements in life. Freud's views he accepts in toto, and in the matter of symbolism he goes beyond even the most ardent disciples of the Freudian cult. Man is considered by Dr. Kempf a being subject to affective cravings; his reactions to these cravings are suppression, repression, dissociation, summation, readjustment, regression, progression and sublimation. On the basis of these terms the author submits a new classification of insanities, showing how the old nomenclature falls within the new Freudian terminology. Psychasthenia, hysteria and manic-depressive types are included as suppression neuroses; dementia praecox, phobias and also some of the former group are included under repression neuroses; paranoid types and pathologic lying, alcoholic and drug neuroses or compensation neuroses, depressive types and involutional melancholia with allied dementia praecox types are regression neuroses; and all of the hallucinated and paranoid, catatonic, hebephrenic and delirious types are dissociation neuroses. The regression neuroses are the result of failure to compensate, but with regression to a preceding more comfortable level permitting wish-fulfilling fancies; and the dissociation neuroses are the results of uncontrollable cravings which dominate the personality despite the efforts of the ego to prevent it.

Naturally, in this conception of life the libido is everything. "Cynical people, including those who are married, as well as unmarried," says Dr. Kempf, "are cynical because they have accepted the world as containing nothing that can ever really gratify their love cravings." "The tendency to sexual castration or secret autoeroticism and perverse substitutions can only be adjusted by aggrandizing the maintenance of virility and removing fear of normal sexual relations." "Most of our chronic lawbreakers and asocial adults, thieves, pimps and prostitutes, whether mental defectives or not, are chronically asocial in their tendencies because of the pernicious influence of mismated parents or the hatred of the adults who raised them." "I have never known an individual, who had fixed autoerotic or perverse cravings, whose history showed that he was treated in his childhood like a true personality when conflicting with his parents." "Anthropological history reveals that, as an animal, man has, universally, acquired a trait which is not to be found in any other species, and that is the capacity to use symbols and images as substitutes for realities in order to acquire stimuli which arouse comfortable and potent autonomic tensions." The sentences quoted are all italicized by Dr. Kempf to indicate their importance in his scheme of study. After establishing these principles, he devotes the major portion of his book to the analysis of a large number of cases from St. Elizabeth's Hospital in Washington. The illustrations, except such as concern various expressions and attitudes assumed by the patients, are reproductions of famous paintings and sculptures, showing the symbolism for sexual objects there displayed, somewhat as was done by the late Dr. Otto Wall in his book on "Phallic Worship."

In the final chapter on psychotherapeutic principles, Dr. Kempf contrasts the virtues of the psychanalytic method with the suggestive and hypnotic methods. He is convinced that the suggestive method of treating a psychopath rarely if ever effects a permanent cure, whereas the psychanalytic method often effects remarkable, apparently permanent cures. He has small patience with those who object to psychanalysis on the ground that it may do more harm than good, and points to failures in certain instances with other therapeutic methods to justify the application of this method. Like many others of the strong adherents of this method of practice, he believes that the only critic of psychanalysis who can be considered at all reliable by the medical profession is the man who has himself practiced psychanalysis and did not have to abandon it because of his own affective discomforts. He even indicates that if a physician fails to psychanalyse successfully a male patient with homosexual cravings, it may be because the physician himself fears a tendency to regress to that condition.

Dr. Kempf's book has in it much of value; it suffers, however, from the same overenthusiasm and unmasticated bolting of undigested pabulum, without the application of the least real scientific scrutiny, that has characterized the offerings of practically all who have entered the psychanalytic field.

PNEUMOPERITONEAL ROENTGEN-RAY DIAGNOSIS. A Monograph with Atlas. By Dr. Arthur Stein, M.D., F.A.C.S., Associate Gynecologist, Harlem Hospital, New York City, and Dr. William H. Stewart, M.D., F.A.C.P., Roentgenologist, Harlem Hospital. Cloth. Price, $30. Pp. 73, with 40 illustrations. Troy, N. Y.: The Southworth Publishing Company, 1921.

This work gives the best description so far published of this valuable aid in the diagnosis of abdominal lesions. The authors have written a clear, concise, comprehensive description of the procedure from its incipience up to the present time. Their technic is impressive, owing to the simplicity with which it is executed. The indications and contraindications are stated clearly. The illustrations, reproduced from the authors' own roentgenograms, show the wide applicability of the procedure and are a valuable collection for study and reference. A noteworthy feature is the description of the roentgenograms in English, French and Spanish.

Medicolegal

Licensing and Regulating Maternity Hospitals

(State v. Women's and Children's Hospital Association (Minn.), 184 N. W. R. 1022)

The Supreme Court of Minnesota affirms an order denying the defendant a new trial after it had been convicted of maintaining a maternity hospital without first having obtained a license. The court holds that Chapter 50, Laws Ex. Sess. 1919, entitled "An act defining and regulating maternity hospitals," is not unconstitutional, as embracing more than one subject; that it was enacted in the exercise of the police power, and infringed no right of the defendant under the provision of the constitution relative to the taking of property without due process, or other constitutional right. The court says that the statute defines a maternity hospital, for the purposes of the act, and provides for its licensing by the state board of control. Conducting such a hospital without a license is a misdemeanor. Regulations are prescribed for its conduct, and for the health and well-being of the inmates, and public welfare is in view. The court is unable to see that the statute contains anything which is not germane to the title. Within the constitutional sense, it embraces but one subject. The statute is a police regulation. Its purpose is to secure the health and comfort and well-being of the

inmates of the hospital and to safeguard the interests of the public. That in doing so it somewhat restricts the activities of those conducting maternity hospitals, if the restriction be no greater than is reasonable, is not important. Others than the owners are interested. That the legislature may require the licensing of maternity hospitals has been held. Whether the licensing of maternity hospitals should be regulated, as it is by the statute drawn in question, was a matter of legislative discretion. The court does not agree with the contention that the statute grants to the board of control arbitrary power to withhold a license, regardless of conditions, and that it is therefore void. The statute is paternalistic. So are other statutes enacted in the exercise of the police power. It contemplates an investigation and consideration of conditions and a supervision and regulation by the board; but an arbitrary refusal of a license is not intended. However, the court adds that the only questions decided are that the title of the act is sufficient within the constitutional requirement, and that in the exercise of the police power the legislature may require maternity hospitals to be licensed.

When Actions for Malpractice are Barred

(Burke v. Mayland (Minn.), 184, N. W. R. 32)

The Supreme Court of Minnesota, in affirming an order overruling a demurrer to the complaint, which stated a cause of action for malpractice, holds that such actions are not barred by the two-year statute of limitations of Minnesota, which applies to actions for an assault, although some of the acts alleged may constitute an assault in law. The court says that the plaintiff brought this action to recover damages from the defendant, a physician and surgeon, for alleged malpractice in the performance of a surgical operation on her and in treating her for her ailments. The defendant demurred to the complaint on the ground that the cause, or causes, of action set forth therein accrued more than two years before the beginning of the action and were barred by the statute of limitations. The defendant construed the complaint as stating two causes of action, the first for an assault, and the second for an assault, if it stated a cause of action at all, and insisted that both were barred by the statute of limitations, which bars actions for assault unless brought within two years after the right of action accrued. But the court is unable to sustain the defendant's contention. Fairly construed, the court thinks that the complaint stated only one cause of action, and that for alleged malpractice. It set forth the facts in detail, and while some of them doubtless constituted an assault in law, they were not set forth as independent causes of action, but as being the acts wherein and whereby the defendant was alleged to have violated his duty to his patient. The action as brought rested on the contract of employment; and the six-year, not the two-year, limitation was the one which applied.

Prescription of Material for Hospital Buildings

(Brigham et al. v. Mayor and Council of City of Dublin (Ga.), 108 S. E. R. 532)

The Supreme Court of Georgia, in affirming a judgment denying the petitioners a writ of mandamus, holds that an ordinance prescribing that buildings to be used for hospital purposes should be constructed of brick or other noninflammable material was authorized by a city charter, which granted to the mayor and aldermen power to make such rules and ordinances respecting every matter as might be by them considered necessary or proper or incident to the government of the city and to the health and welfare of its inhabitants, etc. An ordinance was not void on the ground that it was unreasonable, which declared that it should be unlawful to erect or cause to be erected within the city limits any building to be used for hospital purposes, or other building of like character, of material other than brick, the same to be erected in all other respects as prescribed by the building laws of the city. Applying these principles, the mayor and council of the city were authorized to decline to grant a permit to the petitioners to make additions to an existing building, the same to be constructed of wood.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Birmingham, April 20-23. Dr. H. G. Perry, Montgomery, Secretary.

American Association of Genito-Urinary Surgeons, Washington, D. C., May 2-3. Dr. R. F. O'Neil, 374 Marlborough St., Boston, Secretary.

American Ass'n of Pathologists and Bacteriologists, Washington, D. C., May 2-4. Dr. H. T. Karsner, Lakeside Hospital, Cleveland, Secretary.

American Association of Physicians, Washington, D. C., May 2-4. Dr. Thomas McCrae, 1527 Spruce St., Philadelphia, Secretary.

American Bronchoscopic Society, Washington, D. C., May 3. Dr. Samuel Iglauer, 701 Race St., Cincinnati, Secretary.

American Climatological and Clinical Association, Washington, D. C., May 2-4. Dr. Arthur K. Stone, Framingham Center, Mass., Secretary.

American Congress on Internal Med., Rochester and Minneapolis, April 3-8. Dr. Frank Smithies, 1002 N. Dearborn St., Chicago, Secretary.

American Dermatological Association, Washington, D. C., May 2-4. Dr. Udo J. Wile, University of Michigan, Ann Arbor, Secretary.

American Gastro-Enterological Association, Washington, D. C., May 1-2. Dr. Arthur F. Chace, 525 Park Ave., New York, Secretary.

American Gynecological Society, Washington, D. C., May 1-3. Dr. A. H. Curtis 104 S. Michigan Ave., Chicago, Secretary.

American Laryngological Association, Washington, D. C., May 1-3. Dr. George M. Coates, 1811 Spruce St., Philadelphia, Secretary.

American Laryng., Rhinol. and Otological Society, Washington, D. C., May 4-6. Dr. W. H. Haskin, 40 E. 41st St., New York, Secretary.

American Neurological Association, Washington, May 2-3. Dr. Frederick Tilney, 22 E. 63d St., New York, Secretary.

American Ophthalmological Society, Washington, D. C., May 1-3. Dr. T. B. Holloway, 1819 Chestnut St., Philadelphia, Secretary.

American Orthopedic Association, Washington, D. C., May 2-4. Dr. De Forrest P. Willard, 1630 Spruce St., Philadelphia, Secretary.

American Otological Society, Washington, D. C., May 2-3. Dr. Thomas J. Harris, 104 E. 40th St., New York, Secretary.

American Pediatric Society, Washington, D. C., May 1-3. Dr. H. C. Carpenter, 1805 Spruce St., Philadelphia, Secretary.

American Psychopathological Association, Washington, D. C., May 1. Dr. Sanger Brown, 2d, 118 E. 80th St., New York, Secretary.

American Society of Tropical Med., Washington, D. C., May 2. Dr. B. H. Ranson, Bureau of Animal Industry, Washington, D. C., Secretary.

American Surgical Association, Washington, D. C., May 2-4. Dr. John H. Gibbon, 1608 Spruce St., Philadelphia, Secretary.

American Therapeutic Society, Washington, D. C., May 1-2. Dr. Lewis H. Taylor, The Cecil, Washington, D. C., Secretary.

Arkansas Medical Society, Little Rock, May 17-19. Dr. William R. Bathurst, 810 Boyle Building, Little Rock, Secretary.

California, Medical Society of the State of, Yosemite, May 9-12. Dr. W. E. Musgrave, Butler Bldg., San Francisco, Secretary.

Congress of Amer. Phys. & Surgs. of North America, Washington, D. C., May 2-3. Dr. W. R. Steiner, 646 Asylum Ave., Hartford, Conn., Sec.

Connecticut State Medical Society, Bridgeport, May 17-18. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.

Georgia, Medical Association of, Columbus, May 3-5. Dr. Allen H. Bunce, Healy Building, Atlanta, Secretary.

Illinois State Medical Society, Chicago, May 16-18. Dr. W. H. Gilmore, Mount Vernon, Secretary.

Iowa State Medical Society, Des Moines, May 10-12. Dr. T. B. Throckmorton, Bankers Trust Bldg., Des Moines, Secretary.

Kansas Medical Society, Topeka, May 3-4. Dr. J. F. Hassig, 800 Minnesota Ave., Kansas City, Secretary.

Louisiana State Medical Society, Alexandria, April 11-13. Dr. P. T. Talbot, 1551 Canal St., New Orleans, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 25-27. J. Chatard, 1211 Cathedral St., Baltimore, Secretary.

Mississippi State Medical Association, Hazlehurst, May 9-10. Dr. T. M. Dye, Clarksdale, Secretary.

Missouri State Medical Association, Excelsior Springs, May 9-11. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.

National Tuberculosis Association, Washington, D. C., May 4-6. Dr. George M. Kober, 370 Seventh Ave., New York, Secretary.

Nebraska State Medical Association, Omaha, April 24-27. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.

New Hampshire Medical Society, Concord, May 17-18. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.

New Mexico Medical Society, Gallup, April 28-29. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Acting Secretary.

New York, Medical Society of the State of, Albany, April 18. Dr. E. L. Hunt, 17 W. 43d St., New York, Secretary.

North Carolina, Medical Society of the State of, Winston-Salem, April 25-27. Dr. L. B. McBrayer, Sanatorium, Secretary.

Ohio State Medical Association, Cincinnati, May 2-4. Mr. Don K. Martin, 131 East State St., Columbus, Executive Secretary.

Oklahoma State Medical Association, Oklahoma City, May 9-11. Dr. C. A. Thompson, 508 Barnes Bldg., Muskogee, Secretary.

South Carolina Medical Association, Rock Hill, April 18-19. Dr. Edgar A. Hines, Seneca, Secretary.

South Dakota State Medical Association, Huron, May 16-18. Dr. Frederick A. Spafford, Flandreau, Secretary.

Tennessee State Medical Association, Memphis, April 11-13. Dr. Olin West, 327 Seventh Avenue, N., Nashville, Secretary.

Texas, State Medical Association of, El Paso, May 9-11. Dr. H. Taylor, Texas State Bank Bldg., Fort Worth, Secretary.

West Virginia State Medical Association, Huntington, May 17-19. Dr. Robert A. Ashworth, Moundsville, Secretary.

Western Electro-Therapeutic Association, Kansas City, Mo., April 20-21. Dr. Charles W. Fassett, 115 E. 31st St., Kansas City, Mo., Secretary.

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Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Archives of Dermatology and Syphilology, Chicago

March, 1922, 5, No. 3

*Phenolphthalein Eruptions. F. Wise and E. W. Abramowitz, New York.—p. 297.
*Silver Arsphenamin in Treatment of Syphilis. J. Barrio de Medina, Madrid, Spain.—p. 321.
*Resemblance of Yeasts in Cutaneous Scrapings to Hyphomycetes. F. D. Weidman, Philadelphia.—p. 325.
Pathologic Anatomy of Synovial Lesions of Skin. D. W. Montgomery and C. D. Culver, San Francisco.—p. 329.
*Yeast Infections of Skin. S. S. Greenbaum and J. V. Klauder, Philadelphia.—p. 332.

Phenolphthalein Eruptions.—Five cases are cited by Wise and Abramowitz in which a peculiar polychromatic eruption on the skin, with bullous, vesicular and eroded lesions of the mucosae and genitals were provoked by the ingestion of proprietary laxative containing phenolphthalein. The cutaneous lesions leave pigmented areas which persist for months and even years. The lesions "flare up" after ingestion of the drug, usually affecting the same sites as in the preceding eruption. The pigment in the skin does not react to Perles' ferrocyanid test; the cells in the corium are chromatophores and the pigment is melanin. The eruption exhibits many points of similarity to those resulting from antipyrin and arsphenamin.

Silver Arsphenamin in Syphilis.—The situation with regard to comparative value of various preparations of arsphenamin is summed up by Barrio de Medina as follows: As the ideal treatment has not been found as yet, authors disagree, since they do not obtain the same results. The fact that they inject one preparation in some cases and another in other cases is evidence that none of these preparations is much superior to the others. Therefore, some still prefer the old arsphenamin, some are advocates of neo-arsphenamin, and there are still others who place their hopes in the latest arsenical to come to light. Barrio de Medina's opinion of silver arsphenamin is that it is one more brand of arsphenamin which may be employed in the cases in which it seems to be indicated. It can be used only by specialists, because it has disadvantages which will prevent its general use, and it, therefore, must occupy a secondary place in the treatment of syphilis; at least, so far as the general practitioner is concerned.

Resemblance of Yeasts to Hyphomycetes.—The point emphasized by Weidman is that the presence of filaments in cutaneous scrapings does not always indicate ringworm in the commonly accepted sense.

Yeast Infections of Skin.—In seven cases with a certain type of dermatitis involving the interdigital spaces, pure cultures of a yeast were obtained by Greenbaum and Klauder. In three cases a pure culture of yeast was obtained. In the remaining four cases yeasts and staphylococci were demonstrated. Clinically, these cases conformed, in a general way, to the description of the cases of intertrigo saccharomycetica reported by others. The authors' cases of intertrigo saccharomycetica presented an exact resemblance to ringworm infection existing in the same locality. In none of the seven cases were they able to find fungi other than yeasts. These observations led the authors to study the saccharomycetic flora of the normal skin. The yeasts obtained were classified into four types. Three of the four types found were saccharomyces and one type was a cryptococcus. The types of yeasts obtained from the cases of intertrigo conformed to the four types found on the normal skin.

Boston Medical and Surgical Journal

March 2, 1922, 186, No. 9

*Tumors of Spinal Cord. W. J. Mixter, Boston.—p. 276.
End Results of Surgical Treatment of Eighteen Cases of Tuberculous Cervical Adenitis. F. H. Lahey and H. M. Clute, Boston.—p. 280.

Tumors of Spinal Cord.—In the group of fifty-four cases analyzed by Mixter, laminectomy was performed on forty-five patients, the other nine being deemed inoperable. In these forty-five cases, forty-nine laminectomies were done, with two deaths, a mortality of 4.1 per cent. In one instance, a tumor was found at some distance from the situation expected, and operation was unjustifiably prolonged and the tumor removed at one sitting instead of being completed at a later date. The other death, a few hours after the removal of a small specimen of malignant new growth from the deep tissues of the back, was unexplained, though possibly it was from embolus. There were no other deaths that could be laid even remotely to the operation. Twenty-six patients are now living; of these, three are well, eight so much improved that they are or could be self-supporting, eight are somewhat improved, though still incapacitated, and seventeen have since died. Of these, two died of other diseases, one following definite improvement. The other fifteen have died as a result of the disease for which they were operated, or from sequels.

Journal of Bacteriology, Baltimore

January, 1922, 7, No. 1

Certain Genera of Clostridiaceae. Studies in Pathogenic Anaerobes. V. H. H. Heller, San Francisco.—p. 1.
Studies on Agglutination in Colon-Typhoid Group of Bacilli. O. Ishii, Boston.—p. 39.
Study of Spontaneous Agglutination in Colon-Typhoid Group of Bacilli. O. Ishii, Boston.—p. 71.
Sources and Characteristics of Bacteria in Decomposing Salmon. A. C. Hunter, Washington, D. C.—p. 85.
Viability of Colon-Typhoid Group in Carbonated Water and Carbonated Beverages. S. A. Koser and W. W. Skinner, Washington, D. C.—p. 111.
Binocular Microscope Arranged for Study of Colonies of Bacteria. G. B. Reed, Kingston, Ont.—p. 123.
Investigation of American Stains. Report of Committee on Bacteriological Technic. H. J. Conn, Geneva.—p. 127.

Journal of Infectious Diseases, Chicago

March, 1922, 30, No. 3

*Hydrogen-Ion Studies. I. Changes in Reaction of Blood During Anaphylactic Shock. E. F. Hirsch and L. L. Williams, Chicago.—p. 259.
Id. II. Changes in Reaction of Serum on Thermal Destruction of Complement. E. F. Hirsch and E. C. Peters, Chicago.—p. 263.
*Cultivation of Gonococcus, M. J. Erickson and H. Albert, Iowa City, Ia.—p. 268.
*Heart Rhythm in Diphtheria. C. Schwensen, Copenhagen.—p. 279.
Study of Two Distinct Strains of Streptococcus Isolated from Same Heart-Valve Lesion. K. M. Howell, Chicago.—p. 299.
*Effect of Digitalis in Two Cases of Arrhythmia in Diphtheria. V. Bie and C. Schwensen, Copenhagen.—p. 308.
Complement Fixation. V. Hemolytic Versus Fixability Powers of Complement. R. L. Kahn and E. D. White, Lansing, Mich.—p. 313.
Production of Carbon Dioxid by Typhoid Bacillus and Mechanism of Russell Double Sugar Tube. II. Fermentation or Respiration. Phenol Red as an Indicator. H. J. Nichols and C. B. Wood, Washington.—p. 320.
Effects of Pneumococcus Type I on Leukocytes and Hemopoietic Organs. M. S. Tongs, Chicago.—p. 323.
Specificity of Desensitized State in Serum Anaphylaxis. H. T. Karsner and E. E. Ecker, Cleveland.—p. 333.

Changes in Blood During Anaphylactic Shock.—According to Hirsch and Williams there is a diminished alkalinity of the blood during anaphylactic shock, apparently in proportion to the severity of the symptoms. This change in reaction may become so great as to be incompatible with life. The altered reaction of the blood is accompanied by a roughly proportional lowering of the alkali reserve. Slight changes (usually an increase) in the concentration of the sugar of the blood occur in anaphylactic shock, but not to the degree observed in prolonged acidosis.

Cultivation of Gonococcus.—Testicular blood agar with a reaction of p_H 7.4-7.8 Erickson and Albert found to be the most favorable medium for the isolation and subsequent cultivation of the gonococcus. For the preparation of testicular infusion agar, 2 per cent. peptone, 0.5 per cent. glucose, from 0.2 to 0.3 per cent. monobasic sodium phosphate and 2.5 per cent. granular agar are added. While the tubes are still liquid (just before the agar solidifies) human blood in the proportion of from 0.5 to 2.5 per cent. is added. If human blood is not available, defibrinated rabbit's blood (from 1 to 5 per cent.) may be substituted. The absence of sodium chlorid, the proper reaction and the moisture content are

especially important. Blood or blood serum mixed with the testicular agar or smeared on the surface of slanted tubes is necessary for the ready isolation of the gonococcus, but is not essential for the securing of growths of stock cultures.

Heart Rhythm in Diphtheria.—Five hundred and sixty-eight patients with diphtheria have been examined by Schwensen for symptoms of cardiac impairment; 118 who suffered from grave diphtheria have been especially examined. Furthermore, eight cases that were fatal in the acute stage have been followed thoroughly. Clinical signs of acute myocarditis were found in 17 per cent. of the 568 cases and in 75 per cent. of the cases of grave diphtheria. Typical symptoms of myocarditis were present in all fatal cases in the acute stage. During the course of the diphtheria two distinctly different types of disturbance of the rhythm appeared: (*a*) an "early" type which on an average appeared on the eighth day of illness. It started as organic heart block; in the course of a few hours to a few days. The rhythm, as a rule, became very complex and varying, but still it formed a distinct, easily recognizable type (flutter?). This disturbance explains the pallor, the coolness of the skin and the frequent attacks of syncope. All these patients died of heart failure in the acute stage of the diphtheria. (*b*) A "late" type which consisted of extrasystoles appearing on an average on the thirty-third day of the illness. Among the 562 patients who survived the acute stage extrasystoles were found in 14 per cent. and in 61 per cent. of the grave cases. Of the patients with symptoms of myocarditis 81 per cent. had extrasystoles during convalescence. None of these patients died of heart failure. In four cases of type *a*, histologic examinations of the atrioventricular node and bundle showed that this system was attacked in the same degree as the myocardium surrounding it. Electrocardiograms taken during the fifth week of illness were normal in thirty-one cases with muscular mitral insufficiency and extrasystoles. These last were found in only three patients; the two patients had extrasystoles of auricular origin while the extrasystole in the third case arose from the junctional tissues. On reexamining the patients at least two years after their discharge signs of impairment of the heart were found in more than two thirds of those who came to be reexamined. Diphtheria must, therefore, be considered an important cause of heart failure later in life.

Digitalis in Arrhythmia Due to Diphtheria.—In the two cases cited by Bile and Schwensen the arrhythmia stopped after the administration of digitalis, and the tracings became normal, with the exception of some extrasystoles. In the one case the child afterward recovered; in the second case, death intervened a few days later as a result of the progressive acute myocarditis which attacked the atrioventricular bundle and produced partial heart block. There two cases make it probable that in the treatment of these otherwise fatal cases with digitalis in full doses there may be a chance of curing the patient by saving the damaged myocardium from the great exertion caused by the irregularity. Furthermore, these cases show how the greater degrees of enlargement of the liver are dependent on the disturbances of the rhythm. In one case the enlargement of the liver disappeared simultaneously with the disappearance of the complex arrhythmia; in the second case the liver became very much enlarged simultaneously with the appearance of the irregular partial heart block.

Journal of Laboratory and Clinical Medicine, St. Louis

February, 1922, **7**, No. 5

*Internal Secretion of Pancreas. F. G. Banting and C. H. Best, Toronto.—p. 251.
Effects of Various Foods, Food Factors and Chemical Agents on Resistance of Animals to Acetonitrile. M. Miura, Tokyo, Japan.—p. 267.
*Effect of Time Between Obtaining a Spinal Fluid and Making a Cell Count on Result of Count. J. Wynn, Boston.—p. 273.
Determination of Small Quantities of Atropin in Blood Serum. H. C. van der Heyde, Amsterdam, Holland.—p. 280.
Phenomenon of Bacteriophage. B. Rhodes, Berkeley, Calif.—p. 288.
*Glucose Tolerance Test. W. Langston, Oklahoma City.—p. 293.
Improved Method of Caging and Feeding Mice. H. S. Mitchell, New Haven, Conn.—p. 299.

Internal Secretion of Pancreas.—Evidence is presented by Banting and Best that the islands of Langerhans are essential in the control of carbohydrate metabolism because they produce an internal secretion. The authors injected exhausted and degenerated pancreas extract intravenously. It was found that extracts prepared from these more or less exhausted glands, while retaining to some extent the reducing effect on blood and urine sugar, produce many symptoms of toxicity which are absent after injections of extracts from completely degenerated glands. As to the results: Intravenous injections of extract from dog's pancreas, removed from seven to ten weeks after ligation of the ducts, invariably exercised a reducing influence on the percentage sugar of the blood and the amount of sugar excreted in the urine. Rectal injections were not effective. The extent and duration of the reduction varied directly with the amount of extract injected. Pancreatic juice destroyed the active principle of the extract. That the reducing action is not a dilution phenomenon was indicated by these facts: (1) Hemoglobin estimation before and after administration of extract are identical; (2) injections of large quantities of saline do not affect the blood sugar; (3) similar quantities of extracts of other tissues do not cause a reduction of blood sugar. Extract made 0.1 per cent. acid is effectual in lowering the blood sugar. The presence of extract enables a diabetic animal to retain a much greater percentage of injected sugar than it would otherwise. Extract prepared in neutral saline and kept in cold storage retains its potency for at least seven days. Boiled extract has no effect on the reduction of blood sugar.

Effect of Elapsed Time on Spinal Fluid Cell Count.—Examination of the cells in eighty spinal fluids up to fifteen hours after lumbar puncture convinced Wynn that the cells in clear spinal fluids, collected in clean tubes and tightly stoppered, may in the absence of macroscopic pellicle, sediment, or web be safely counted if thoroughly mixed at any time up to at least fifteen hours. If the spinal fluid is not clear or becomes clouded, the results of counts at different times are apt to vary. It is desirable but not necessary for fluids to be collected in sterile tubes. Whether the fluids are kept at room temperature or in the icebox seems to be of little consequence. In two cases of meningitis, the thorough mixture of small quantities (from 0.2 to 0.5 gm. for 6 c.c.) of powdered sodium citrate with the fluids made it possible to duplicate the original cell counts (within the limit of technical error) at three and fifteen hour intervals.

Glucose Tolerance Test in Cancer.—The relationship between malignant disease and sugar tolerance was investigated by Langston on 154 patients, fifty-three of whom had proved carcinoma. Included in the list were cases of hyperthyroidism and hypothyroidism, neurasthenia, diabetes, tuberculosis, sarcoma and carcinoma are reported. Forty-three cases of carcinoma gave a curve, exactly the same as is found in cases of hyperactivity of the thyroid, suprarenals, etc., a curve which rises sharply to 200 mg. in forty-five minutes and over at the end of two hours. In many cases there was a marked change in the type of the curve following removal of the tumor, in a few cases reaching normal within a month. It is quite evident that carbohydrate metabolism is disturbed by carcinomatous growth, apparently in the same way as in certain endocrine disturbances. This disturbance is probably due to a secretion of the tumor cells; consequently the effect may occur quite early. If this be true, the blood sugar tolerance test should be a valuable diagnostic test for carcinoma, although there is no sugar tolerance curve definitely characteristic of carcinoma; but, most cases of carcinoma give a certain type of curve which is found in comparatively few other conditions, including tuberculosis, diabetes mellitus and hyperthyroidism. The test is of no value in suspected carcinoma of the bile tract area complicated by jaundice.

Laryngoscope, St. Louis

January, 1922, **32**, No. 1

Operative Treatment of Suppurative Meningitis: Irrigation of Cranial and Spinal Subarachnoid Spaces. W. P. Eagleton, Newark, N. J.—p. 1.
Deficiency Diseases of Ear, Nose and Throat: (1) Otosclerosis. (2) Hyperplastic Ethmoiditis. A. B. Kauffman, Chicago.—p. 50.
Epiglottidectomy for Relief of Congenital Laryngeal Stridor; Report of Case. S. Iglauer, Cincinnati.—p. 56.

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February, 1922, **32**, No. 2

Analysis of Systemic and Local Conditions Following Tonsillectomy and Adenoidotomy. C. G. Coakley and E. L. Pratt, New York.—p. 81.
Two Unusual Nasopharyngeal Tumors. G. B. New, Rochester, Minn.—p. 99.
Upholsterer's Tack in Right Main Bronchus for Seven Years. Removal by Peroral Bronchoscopy. Drainage of Lung Abscess. Recovery. J. D. Kernan, New York.—p. 102.
Tests for Aviators. C. M. Robertson, Chicago.—p. 102.
New Tonsil Hemostatic Forceps for Ligation of Vessels in Tonsil Fossa and Other Deep Cavities. H. V. Dutrow and A. G. Farmer, Dayton, Ohio.—p. 113.
Diagnosis and Treatment in Lateral Sinus Thrombophlebitis. J. B. Gregg, Sioux Falls, S. D.—p. 115.
Tonsil Section (Glass) Tube for Diagnosis and Treatment. L. M. Hurd, New York.—p. 121.
Primary Adenocarcinoma of Bronchus. C. J. Imperatori, New York.—p. 123.
Abscess of Lung. L. Clendenning, Kansas City.—p. 128.
Diaphragmatic Pinchcock in So-Called "Cardiospasm." C. Jackson, Philadelphia.—p. 139.

Maine Medical Association Journal, Portland

February, 1922, **12**, No. 7

Thyroid Gland and Toxemias; with Special Relation to Intestinal Stasis. W. S. Bainbridge, New York City.—p. 177.
Cesarean Section. R. D. Small, Portland.—p. 188.

Medical Record, New York

March 4, 1922, **101**, No. 9

Efficient Treatment of Compound Fractures. C. A. McWilliams, New York.—p. 353.
Pericecal Tumor, Roentgen-Ray Diagnosis; Benefit from Roentgen-Ray and Radium Therapy for Postoperation Recurrence. S. Tousey, New York.—p. 356.
Purpura with Gastrointestinal Symptoms. W. H. Barber, New York.—p. 358.
Sarcoma of Stomach. W. J. Gillette, Toledo, Ohio.—p. 360.
Diphtheritic and Postdiphtheritic Paralysis. H. B. Sheffield, New York.—p. 362.
Rectal Stricture and Rectal Cancer Treated with Carbon Dioxide Snow. E. J. Clemons, Los Angeles.—p. 364.
Plea for Standardization of Obstetric Procedures in Open Hospitals. J. Weiss, New York.—p. 365.
Postwar Observations of Neuropsychiatric Cases. P. J. Trentzsch, Washington, D. C.—p. 369.
External Use of Diathermy in Cases of Impacted Urinary Calculi. R. L. Dourmashkin, New York.—p. 371.

Nebraska State Medical Journal, Norfolk

March, 1922, **7**, No. 3

Review of Two Thousand Consecutive Confinements. F. Schaufelberger, Hastings.—p. 77.
Recent Developments in Treatment of Diseases of Biliary Tract. F. A. Brewster, Beaver City, Neb.—p. 83.
Pyloric Stenosis. C. R. Spicer, Hastings.—p. 86.
Group Medicine from Standpoint of Surgeon. H. M. Hepperlen, Beatrice.—p. 89.
Schick Test and Diphtheria. A. G. Lurschen, Columbus.—p. 92.
Physician as Witness. C. W. Burr, Philadelphia.—p. 95.
Practical Perimetry. H. S. Gradle, Chicago.—p. 100.

New Orleans Medical and Surgical Journal

March, 1922, **74**, No. 9

*Malarial Infection as Possible Cause of Symmetric Gangrene of Extremities. J. B. Guthrie, New Orleans.—p. 604.
Suggestive Mixed Treatment in Chronic Malaria. T. E. Wright, Monroe.—p. 612.
The Sinuses. J. T. Crebbin, New Orleans.—p. 618.
Oral (Teeth) Focus in So-Called Sciatica. Two Cases. W. A. Lurie, New Orleans.—p. 622.
Clinical Study of Colorimetric Method for Determining Gastric Acidity. D. N. Silverman, New Orleans.—p. 627.
Case of Infected Bladder and Kidneys Producing Primary Symptoms and Unrecognized as Such on Account Malformation of Sacrum. W. P. Bradburn, New Orleans.—p. 633.

Malarial Infection Causes Gangrene of Extremities.—Guthrie reports the case of a man, aged 22, who suffered intensely with throbbing pains in hands and feet and compained also of abdominal "cramps." He had a chancre in 1918 and early in the same year had suffered from malaria and an attack of measles in close succession. The pain in the feet was intense and morphin was required. A symmetrical asphyxia of the hands and feet was noted with areas of discoloration, desquamation and superficial sloughing on the former. Blood Wassermann was positive. Five days after admission, under treatment pain was entirely gone. During first two weeks after admission the temperature ranged between 99 and 101 F., followed by sweating. A double infection of malarial parasites was found—tertian and falciparum. Quinin was given and the temperature promptly declined. On account of low blood pressure, intravenous glucose solution, in strength of 5 per cent., was given and repeated in 700 c.c. dosage. This seemed to improve the circulation in the extremities. The mottled appearance on the back of the hands and dorsum of the feet disappeared. Injections of mercury into the buttock with sodium iodid by mouth were given with slight interruptions during patient's stay in the hospital.

New York State Journal of Medicine

February, 1922, **22**, No. 2

*Tuberculosis of Pericardium. W. W. G. Maclachlan, Pittsburgh.—p. 45.
Infiltration and Infiltration-Block vs. Regional Anesthesia in Abdominal Work. R. E. Farr, Minneapolis.—p. 49.
Anesthesia: Its Place in Practice of Medicine. J. J. Buettner, Syracuse, N. Y.—p. 52.
*Roentgenographic Study of Sella Turcica in Normal Children. M. B. Gordon and A. L. L. Bell, Brooklyn.—p. 54.
Prevention and Treatment of Undernourishment in Childhood. W. H. Donnelly, Brooklyn.—p. 59.
Official Relation of State Medical Society to Child Welfare Activities. L. C. Ager, Brooklyn.—p. 62.
*Case of Periodic Family Paralysis. M. Neustaedter, New York.—p. 65.
Medico-Industrial Relations of New York State Workmen's Compensation Law. A. T. Lytle, Buffalo, N. Y.—p. 69.

Tuberculosis of Pericardium.—While the course of tuberculous pericardates is to recovery in a certain percentage, MacLachlan states that in the greater number of cases the condition is fatal. At necropsy he has seen evidence that spontaneous healing does occur. The tuberculous form of pericarditis which produces a recognizable clinical entity is a disease with a high mortality.

Sella Turcica in Normal Children.—Gordon and Bell classify the sella turcica in children by means of roentgenograms into three groups according to shape: A, circular; B, oval, and C, flat and saucer shape, with modifications. Groups A and B were found in all ages while C was practically limited to the first three years. The shape of the sella was found not to have any significance except in the case of the flat Group C type. This type is always found in small heads, but it does not necessarily follow that all small heads exhibit this type. There is a marked variation for each age, both as to height and length of the sella for that particular age. The average height and length of the sella shows a comparatively rapid increase in the first two years with a gradual yet irregular increase from then on up to the age of 12. There is a tendency for the average height increase to follow the average length increase. There is apparently no relationship between the size of the head and the size of the sella based on head measurements. There is no difference in the occurrence of the three groups between the heads of boys and girls.

Periodic Family Paralysis.—The family history in Neusteadter's case was interesting. A paternal cousin died of cancer at 30; maternal grandmother died of diabetes; two maternal cousins are insane; three maternal uncles had periodic family paralysis, of whom one died in an attack at the age of 35, another died of pneumonia at 27, the third is living. He is 29 and did not have an attack in three years. The three uncles were not married. In two the attacks began at the age of 16 and in the third at 15. The one who died of pneumonia had the last attack about six months before his death. The patient, aged 18½, had his first attack at 14, characterized by marked weakness in all extremities, lasting half an hour. The second seizure at 15 completely paralyzed all extremities; at the third seizure, eight months later, he became paralyzed in the evening and fully recovered in the morning; in the fourth attack eight months later he arose in the morning paralyzed and did not recover until noontime. In the following one and a half years he had five more attacks at intervals of from three to six months. The last two at intervals of three weeks. All these attacks came on over night and lasted till the afternoon. The paralysis was complete involving all extremities, the muscles of the trunk and neck. They would be ushered in by a feeling of fatigue and

numb ache in the muscles of the extremities and palpitation of the heart, lasting at times a whole day. He would go to bed dizzy, sleep profoundly and rise in the morning completely or partially paralyzed in upper or lower extremities. The paralysis would grow progressively worse until all the musculature mentioned would become involved. In some of the attacks he had difficulty in deglutition. In recovering, the muscles that became affected last would improve first, the distal ends of the extremities first then the proximal parts. He invariably remains generally weak for twenty-four hours after the seizure. He vomited in all attacks, excepting in the last two, a number of times. Headache is always present and perspiration is a constant accompaniment. It cannot be elicited whether the temperature was elevated during the attacks.

Ohio State Medical Journal, Columbus

March 1, 1922, **18**, No. 3

Acute Appendicitis. C. D. Hey, Columbus.—p. 173.
*Intussusception of Appendix: With Report of Case. P. M. Spurney and D. M. Nyquist, Cleveland.—p. 181.
Immunity with Reference to Tuberculosis. C. C. Kennedy, Bethel, Ohio.—p. 189.
Some Suggestions on Relation of Congenital Syphilis to Juvenile Delinquency. H. H. Goddard, Columbus.—p. 193.
Use of Forceps in Obstetrics. A. H. Bill, Cleveland.—p. 195.
Treatment of Burns: Report of Cases. G. R. Micklethwaite, Portsmouth, Ohio.—p. 198.
*Value of Indigocarmin as Functional Kidney Test. C. M. Harpster, Toledo.—p. 200.
Selling Public Health in a General Health District. A. Ailes, Sidney, Ohio.—p. 206.

Intussusception of Appendix.—Spurney and Nyquist review the literature analyzing fifty-one cases and report one case in which they found a nonadherent appendix with base very much enlarged, thickened, firm on palpation, about which the cecum seemed to fit as a glove. The appendiceal contents were protruding into the cecum for about 1 inch. Because of evident inability to remove the appendix by usual means, it was excised by a circular incision around the base of the cecum, resection of the head of the cecum being performed.

Indigocarmin Test of Kidney Function.—All things considered, the indigocarmin test, with the dye properly prepared and administered intravenously, is in Harpster's opinion the most reliable and simplest of all tests of kidney function.

Oklahoma State Medical Association Journal, Muskogee

February, 1922, **15**, No. 2

Practical Method of Selecting Donors for Blood Transfusion. G. Ellison, Norman.—p. 37.
Blood Transfusion: Citrate Method. F. H. Clark, El Reno, and W. H. Bailey, Oklahoma City.—p. 40.
Surgical Management of Two Congenital Malformations of New-Born. A. A. Will, Oklahoma City.—p. 43.
Congenital Deformities of Mouth and Face. C. von Wedel, Oklahoma City.—p. 46.
Adventures in Diagnosis. B. H. Brown, Muskogee.—p. 49.

Public Health Journal, Toronto

February, 1922, **13**, No. 2

Health Service in Schools. E. H. Dyke, Toronto.—p. 49.
School Program and Sex Education. P. Sandiford, Toronto.—p. 59.
Venereal Problem in Large Towns and Small Cities. W. F. Roberts, New Brunswick.—p. 63.
Mental Defect and Social Hygiene. N. L. Burnette.—p. 69.

Surgery, Gynecology and Obstetrics, Chicago

March, 1922, **34**, No. 3

*Practical Importance of Thoracoscopy in Surgery of Chest. H. C. Jacobaeus, Stockholm, Sweden.—p. 289.
Laryngectomy. R. Woods, Dublin, Ireland.—p. 297.
Laryngectomy. G. W. Crile, Cleveland.—p. 305.
Function of Gallbladder. W. B. Harer, E. H. Hargis and V. C. Van Meter, Philadelphia.—p. 307.
*Sarcoma of Long Bones. H. W. Meyerding, Rochester, Minn.—p. 321.
Sarcoma of Long Bones. A. P. C. Ashhurst, Philadelphia.—p. 333.
Registry of Cases of Bone Sarcoma. E. A. Codman, Boston.—p. 335.
*Clinical Significance of Abdominal Pain in Children. J. Brenneman, Chicago.—p. 344.
Gross Pathology of Brachial Plexus Injuries. A. W. Adson, Rochester, Minn.—p. 351.
Surgical Anatomy of Trigeminal Nerve. A. B. Kanavel and L. E. Davis, Chicago.—p. 357.
*Secondary Parotitis. F. S. Lynn, Baltimore.—p. 367.
Perforated Ulcers of Duodenum. E. C. Brenner, New York.—p. 370.
Anomalous Right Subclavian Artery and Its Possible Clinical Significance. A. A. Goldbloom, Philadelphia.—p. 378.
*Accessory Pancreas with Ulcer of Pylorus. H. Cohen, New York.—p. 384.
Stricture of Ureter as Explanation of Some Obscure Abdominal Conditions. T. M. Green, Wilmington, N. C.—p. 388.
Results in Interposition Operation for Procidentia and Prolapse of Uterus. H. N. Shaw, Los Angeles.—p. 394.
*Inguinal Herniotomy Under Regional Anesthesia. G. Labat and W. R. Meeker, Rochester, Minn.—p. 398.
Individual Duodenal Roentgen-Ray Demonstration. H. W. Crouse, El Paso, Texas.—p. 404.
Esophagectomy. S. Bunnell, San Francisco.—p. 408.

Thoracoscopy.—For the diagnosis and localization of pleural and pulmonary tumors Jacobaeus considers it of great importance to make a roentgen-ray examination before as well as after the induction of pneumothorax. By making such an examination after the induction of pneumothorax valuable information is obtained, which completes the information already obtained by the roentgen-ray examination made before the induction of pneumothorax. Thoracoscopic examination gives valuable information in diagnosing and localizing pleural and pulmonary tumors, and verifies the roentgen-ray examination. If it is not possible to use a pressure difference apparatus, it might be advantageous to induce pneumothorax previous to operation in the pleural cavity. If a pressure difference apparatus be employed, then pneumothorax for the thoracoscopic examination ought to be induced as shortly before the operation as possible, in order that the inflation of the lung after the operation may not be rendered more difficult or impossible. If the lung is inflated after the operation, more favorable conditions for the course of healing are eventually obtained.

Sarcoma of Long Bones.—In the Mayo Clinic from September, 1907, to September, 1921, 470 cases were diagnosed sarcoma of the extremities; 168 (35.7 per cent.) of these were sarcoma of the long bones. One hundred and nine of the patients were operated on and a microscopic diagnosis was made of sarcoma of the femur, tibia, fibula, humerus, radius and ulna. Besides the 470 cases, there were 18 in which a diagnosis of giant cell tumor of the long bones was made at operation and from microscopic examination. Fifty-nine of the 168 patients were inoperable at the time of examination or they refused operation. In 85 of the 109 cases the sarcoma was in a lower extremity. It was in the femur in 49; in the tibia in 27; in the fibula in 9; in the humerus in 18; in the radius in 3; and in the ulna in 3. The left lower femur was involved in 27, the right in 22, the upper end of the left tibia in 17, and the right in 10. As to trauma causing bone tumor, Meyerding's experience leads him to believe that the single, hard, local injury is the type most often followed by sarcoma. Constant irritation causes traumatic periostitis; a more severe injury often causes a subperiosteal hematoma which may undergo ossification rather than absorption. The significant relationship between trauma and sarcoma is borne out by the localization of sarcoma in the parts most commonly exposed to trauma. The principal points to be decided before operating are malignancy, metastasis and the extent of bone involved. With early diagnosis, eradication of the tumor, care to exclude patients with metastasis, and the use of radium, roentgen ray, and Coley's toxin, prolongation of life may be looked for following operation.

Significance of Abdominal Pain in Children.—Pains that occur wholly or predominatingly in infancy or in early childhood, Brenneman says, are nearly all caused by the obstruction of a hollow peristaltic viscus. Three stand out conspicuously: (1) colic, and the pains of indigestion; (2) those due to intestinal obstruction, acute ileocolic intussusception greatly predominating; (3) and the paroxysmal pain of pyloric stenosis. Great distention and pain from an overtight anal sphincter is rarer than any of these but no less real. In older children green apple, or corn, or grape, "colic" is much more frequent than in the adult. Other forms of abdominal pain that occur relatively frequently in the child are those that accompany throat infections and pneumonia. Less frequent but no less peculiar to childhood are the referred pains from tuberculous spondylitis, from acute hip disease and from pericarditis; the pain of acute nonappendiceal peritonitis;

the multiform pains of tuberculous peritonitis; the abdominal pain that accompanies rheumatism and Henoch's purpura; the sharp paroxysmal pain that goes with a distended bladder with no casual pathology; and lastly the pains due to acutely inflamed mesenteric and retroperitoneal glands and to sarcoma of the kidney or other abdominal organ. Of worms Brenneman says that, in his experience, if a worm has ever caused an abdominal pain he has not been aware of it, though pain from that source cannot be denied. There are still other pains that manifest themselves rather differently in the child at various ages and also as compared with the adult, or perhaps rather that offer greater difficulties in diagnosis. Here only appendicitis is considered.

Secondary Parotitis.—Lynn reports three cases of this kind. One patient subjected to a panhysterectomy for carcinoma of the cervix developed parotitis two days after the operation. The second patient developed parotitis nine days after a right nephrectomy was done for nephrolithiasis with pylonephritis. The third patient had an appendicitis, with diffuse peritonitis. Operation was out of the question. With ice to the abdomen, the Fowler's position, Murphy's proctoclysis and infusions of salt solution the general and abdominal conditions improved. Right sided parotitis developed on the seventh day.

Accessory Pancreas Causes Pyloric Ulcer.—Cohen believes that the chemical irritation of the pancreatic juice on the tissues was the cause of the ulcer in his case.

Herniotomy with Regional Anesthesia.—Regional anesthesia with procain-epinephrin solution is regarded by Labat and Mecker as the method of choice in inguinal herniotomy and should be used generally instead of only for patients who are unsafe subjects for general anesthesia. For inguinoscrotal or bilateral herniotomy in very obese patients, spinal procainization is easier, quicker, and as safe as regional field block. A hypodermic of morphin and scopolamin one hour before anesthesia is induced is of aid in calming nervous apprehension.

Tennessee State Medical Ass'n Journal, Nashville

February, 1922, **14**, No. 10

Diverticula and Diverticulitis of Sigmoid. D. R. Pickens, Nashville.—p. 361.
Treatment of Neuralgia of Fifth Nerve by Injection of Gasserian Ganglion. D. Eve, Nashville.—p. 364.
Ulcer of Stomach and Duodenum. W. D. Haggard, Nashville.—p. 368.
Diagnosis of Acute Abdominal Crises. H. H. Shoulders, Nashville.—p. 375.
*Luminal in Treatment of Epilepsy; Report of Cases. J. C. Hill, Bearden, Tenn.—p. 380.
Some Needs of State Hospitals for Insane. R. E. L. Smith, Bearden.—p. 384.
*Unusual Case of Paroxysmal Tachycardia. L. Smith, Nashville.—p. 388.

Luminal in Epilepsy.—Hill's experience with luminal in the treatment of seventeen cases of epilepsy was very satisfactory. Several patients have gone for a considerable length of time without having a convulsion. In only one case the drug apparently had no effect.

Unusual Paroxysmal Tachycardia.—Smith reports the case of a woman, about 55, who complained of repeated and often prolonged attacks of very rapid heart action which began about eight years ago. They sometimes continued for weeks. They were accompanied by dyspnea, but not by pain. They began and ended abruptly. An arterial pulse tracing showed a number of short periods of rhythmeal tachycardia, interspersed by a few normal beats mixed with extra systoles In Smith's opinion the case is unusual in that it shows such a variability in the same individual and that it must be differentiated from auricular fibrillation.

West Virginia Medical Journal, Huntington

January, 1922, **16**, No. 7

Treatment of Infections of Cervix. R. J. Wilkinson, Huntington.—p. 255.
Advantages to Be Gained by Cooperation of Physician and Pharmacist. J. C. Davis, Wheeling.
Instructions to Gonorrhea Patients. C. J. Broeman, Cincinnati.—p. 262.
Thirty Years of Obstetrics. E. F. Moore, Davis.—p. 265.
Clinical Study of Ectopic Gestation. R. H. Walker, Charleston.—p. 268.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Glasgow Medical Journal

February, 1922, **97**, No. 2

Fibroids Complicating Pregnancy, Labor and Puerperium; Illustrative Cases. G. B. Marshall.—p. 65.
*Bacillus Coli Infection of Urinary Tract in Infants. J. Thomson.—p. 82.
Surgical Kidney. K. Dalziel.—p. 90.
Health of Munition Workers in Shell Filling Factory. J. Anderson and E. D. Anderson.—p. 98.

Bacillus Coli Infection of Urinary Tract.—Alkalization of the urine Thomson regards as being the best treatment in these cases. Potassium citrate is the alkaline drug generally given for this purpose. It is well usually to begin with from 60 to 100 grains in the day, but in some cases this amount may have to be increased to 120 or even 180 grains before the urine turns alkaline and the temperature falls. Occasionally the urine becomes alkaline within a day or two of the beginning of the treatment; often it takes four or five days—rarely six or seven—but never more. If diarrhea sets in during the treatment the change in the reaction of the urine is delayed. If the disease has spread to the kidneys to any serious extent, this treatment has little, if any, effect on the temperature or on the other symptoms. In cases in which there is a mixed infection (usually in older children) alkalization of the urine usually does nothing but harm; but sometimes it may, with advantage, be alternated with the use of hexamethylenamin. When in an uncomplicated case of acute colon bacillus pyelitis the urine has been rendered alkaline and kept so, the temperature always falls to normal, or nearly normal, within one or two days at most; along with this the subjective symptoms improve. The pus also disappears rapidly from the urine, though often, weeks or months later, it may be possible to obtain a culture of the organism. During the continued administration of large doses of the citrate, there is a strong tendency for the urine to turn acid again from three to seven days after it has become alkaline. Along with this return of acidity the temperature rises to a varying degree, and there may be some return of the other symptoms. If the treatment is continued steadily these slight relapses rapidly subside in a few days, and the further progress of recovery is uninterrupted.

Journal of Tropical Medicine and Hygiene, London

Feb. 1, 1922, **25**, No. 3

*Intestinal Bilharziasis in the West Indies. S. B. Jones.—p. 25.
Antimony in Treatment of Lepers and Hydatid Disease. F. G. Cawston.—p. 27.

Intestinal Bilharziasis in West Indies.—Jones cites cases of intestinal bilharziasis in which he found the characteristic later spined ova of *Schistosomum mansoni*. Ova of other parasites were also present, chiefly *Ascaris lumbricoides* and *Trichuris trichiura*. About twenty-four cases in all have been seen, in each of which the diagnosis was arrived at after microscopic examination. Certain symptoms of the disease are not unlike those of hookworm infection as seen in the southern United States. Beyond directions as to prophylaxis of the water supply—boiling drinking water and exposing that used for bathing to the sunlight for a day—and treatment with emetin hydrochlorid, in a few instances, no active curative measures were undertaken. Where ascarides were present, oil of chenopodium was most effective in ridding the host of these and at the same time ameliorating the symptoms of gastric distress caused by the bilharzial parasites. Intravenous injections of tartar emetic were not attempted as the patients were not sufficiently under control.

Lancet, London

Feb. 18, 1922, **1**, No. 5138

*Inflammatory Strictures of Rectum. H. Hartmann.—p. 307.
*Diagnosis of Headaches and Other Nervous Manifestations of Nasal Origin. P. Watson-Williams.—p. 311.
*Schick Test for Determination of Susceptibility to Diphtheria. T. E. Dickinson.—p. 312.
Varieties of Traumatic and Toxic Ulnar Neuritis. E. F. Buzzard.—p. 317.

*Hereditary Perforating Ulcer of Foot. E. P. Hicks.—p. 319.
*Epididymitis and Suprapubic Prostatectomy. H. P. W. White.—p. 321.
Effect of Edestin on Mammary Secretion. G. A. Hartwell.—p. 323.

Inflammatory Strictures of Rectum.—Of the eighty-six cases of this condition seen by Hartmann syphilis existed in thirty. In ten cases pulmonary tuberculosis existed before the first symptoms of stricture. Pederasty, gonorrheal infections and leprosy also acted as etiologic factors. Chronic constipation, in Hartmann's opinion, does not have any influence in the etiology of stricture. Hartmann has treated his patients by dilatation and complete extirpation. He performs an intrasphincteric amputation very much like Whitehead's operation for hemorrhoids. This operation was performed in thirty-four cases with thirty-two cures. Twice he performed an abdominoperineal excision on account of a stricture reaching the inferior half of the pelvic colon; results, one cure and one death. In cases beyond the reach of local treatment, in which extensive suppuration is developed around the rectum, and the condition is grave, Hartmann performs iliac colostomy.

Headaches of Nasal Origin.—Among the nervous symptoms of nasal origin Watson-Williams asserts that headache is the dominant symptom, and now very generally recognized as being sometimes attributable to the nose, sometimes to ocular defects, or to the teeth. The existence of a persistent or recurrent purulent catarrh may be obvious or elicited by inquiry, but the nonpurulent discharge is apt to be ignored by the patient, and must be sought for. The neurasthenic symptoms are usually worse in the morning on waking, or for the first hour or two after rising; they are often periodic, better in warm dry weather, worse in cold damp weather, always aggravated by intercurrent colds. But the history of the case may reveal many facts which point to a source of recurrent infection; headache or heaviness, recurring sore throats, muscular rheumatism, rheumatoid arthritis, gastrointestinal catarrh and appendicitis are so frequently associated with a chronic sinus infection that their interdependence is sometimes hardly open to doubt. A sinus infection may be of some years' standing, and a constant source of ill health, without seriously arresting the patient's notice. Often the existence of a latent nasal catarrh can only be determined by direct inspection of the nasal passages anteriorly and posteriorly, and, perhaps, only by passing a fine cannula into the sinuses, and washing out or sucking the contents back into a sterile syringe, and submitting them to bacteriologic examination and culture.

Value of Schick Test.—Dickinson's experience with this test in 1,200 cases has shown that it is safe. In not one case did sepsis develop. Delayed reactions occurred in 154 cases. They occurred in normal cases, and in every disease except puerperal fever, and with every batch of toxin; 147 reactions were delayed one day, six delayed four days, and in one case five days elapsed before a positive reaction appeared. Abnormal pigmentation occurred in ten cases, a very marked purplish red or dark plum color developed. Massive scaling occurred in two cases of scarlet fever. Vesiculation occurred in three cases of scarlet fever. Out of 222 pseudoreactions, fifteen showed definite scaling. Among 650 scarlet fever cases, the positive percentage curve closely followed that for the total combined cases, but the total percentage was slightly higher, 47.38 as against 45.09. These cases, Dickinson believes, warrant the suggestion that scarlet fever tends, very slightly, to increase susceptibility to diphtheria. His experience with toxic cases agrees with that of Schick that toxic individuals tend to give a negative reaction.

Hereditary Perforating Ulcer of Foot.—Hicks cites a case of perforating ulcer of the foot in which there was found a hereditary element. Among thirty-four members of the patient's family, spread over four generations, there were ten who suffered from the disease. The cardinal symptoms were perforating ulcers of the feet, shooting pains about the body and deafness. The condition was very nearly similar in all the patients, so that it is easy to describe a common type of the disease. The affected members of the first and second generations are dead, and there are no medical records of the last years of their lives; those of the third generation have not yet progressed far, so that the picture of the later stages is not very definite. None of the fourth generation is affected, but they have not yet reached the age at which the disease appears.

Epididymitis and Suprapubic Prostatectomy.—Investigations made by White show that inflammatory changes in the epididymis as a result of prostatectomy are the rule. Of his fifty cases 82 per cent. gave evidence of it. The degree of inflammatory process varied from the mildest form which could be detected by palpation and caused no symptoms, to the purulent variety of epididymo-orchitis accompanied by local and constitutional disturbance.

Quarterly Journal of Medicine, Oxford

January, 1922, 15, No. 58

*Pneumonias and Types of Pneumococci. A. Malloch.—p. 103.
*Streptococcal Infections of Heart. C. F. Coombs.—p. 114.
Twenty Cases of Lethargic Encephalitis: Pathologic Findings in Four Cases. W. E. Hume, F. J. Nattrass and A. F. B. Shaw.—p. 131.
*Dropping (Gastroptosis) of Stomach: Study Based on Series of 150 Cases. P. C. Conran.—p. 144.
*Etiology of Rickets, Early and Late. H. S. Hutchison and S. J. Shah.—p. 167.

Types of Pneumococci in Pneumonia.—In the sixty-five cases of lobar pneumonia studied by Malloch the proportions of the different types of pneumococci were similar to those noted in America, except that much fewer of Type III were found, and more cases were due to typical Type II subgroups. At least one third of all the lobar cases were due to Type I. The death rates in all but Type II cases were lower than in America. More complications were caused by Type I than by any other group. One case of endocarditis due to Type IV is described. The three "fixed" types were isolated from the sputum of cases of bronchopneumonia, but more often a Type IV pneumococcus was found—the commonest throat pneumococcus. Pfeiffer's bacillus was found much more often in association with Type IV, in both lobar and especially in bronchopneumonic cases, than with the other types. One of the cases in which a Type III pneumococcus was also found—a case of bronchiolitis and bronchopneumonia—was probably caused by Pfeiffer's bacillus. Type I was isolated from cases of pneumococcal peritonitis; twice in fatal cases in children, with the generalized septicemic form; and twice from adults (with no septicemia) who recovered.

Streptococcal Infections of Heart.—Coombs summarizes briefly histologic investigations made to throw light on the etiology of rheumatic carditis. Thirty-seven hearts from patients with rheumatic infections have been examined. In twenty-six instances, the patients were children or adolescents with manifestations of active infection. In eighteen of these cases the myocardium was found to show submiliary nodules. Eleven hearts were from patients dying of the mechanical effects of rheumatic heart affection. Histologic studies confirm the view that cardiac rheumatism is a result of a bacterial infection. Reasons are given for regarding this kind of carditis as resulting from invasion of the heart from time to time, through its coronary blood supply, by streptococci. Streptococci were found either during life, or after death, or both in twenty cases of endocardial ulceration. Streptococcal ulceration of the endocardium is characterized by: (*a*) disproportionately severe lesions of the endocardium; (*b*) the embolic nature of the myocardial lesions. The presumption is that (*b*) is secondary to (*a*). The endocardium is invaded sometimes from its surface, sometimes through its own coronary blood supply. This invasion, predisposed to by local and general defects of resistance, is due in some cases to obvious sources of infection, such as puerperal sepsis. When the source is not obvious, there is reason to suspect invasion of the system by the common streptococci of the alimentary or respiratory tract. The lesions of the human heart which follow its invasion by streptococci are described.

Gastroptosis Cause of Digestive Trouble.—Approximately one fifth of the patients complaining of digestive trouble who were examined by Conran were the subjects of severe gastroptosis. The condition was rather more than three times as common in the women as in the men. A greater number of persons with severe gastroptosis, both men and women, com-

plained of digestive symptoms in later life than in youth, but the condition was in a few cases observed in children and adolescents. A greater number of both nulliparas and of multiparas with severe gastroptosis complained of digestive symptoms in later life than when young, especially in the case of the multiparas. A family history of digestive trouble was elicited in one third, and of neurosis, cancer, and tuberculosis each in one tenth, of the cases of severe gastroptosis. In more than one half of the cases the abdominal symptoms were said to have dated from either an acute fever, an attack of appendicitis, an abdominal operation, a confinement, or a period of mental and physical strain. In the case of women, and possibly men also, excessive exercise may both bring on symptoms and exaggerate the ptosis. The persons with severe gastroptosis were, on an average, emaciated to the maximum degree considered compatible with good health.

Etiology of Rickets.—Hutchison and Shah assert that the results of their investigation show that the most important etiologic factor in the production of rickets is lack of fresh air, sunlight, and exercise. Diet did not have any effect in the production of rickets in the subjects studied. Therefore, it is concluded that a deficiency of fat soluble vitamin cannot be the principal cause of rickets.

Archives des Maladies du Cœur, etc., Paris

December, 1921, **14**, No. 12

*The Auriculoventricular Bundle. D. Daniélopolu and V. Danulescu.—p. 529.
*Auscultation Sphygmomanometry. J. Barbier.—p. 541.

Latent Lesions in Auriculoventricular Bundle.—A large number of electrocardiograms are given to illustrate different means by which minute latent lesions in the ramifications of this bundle can be rendered manifest when otherwise they do not modify the electrocardiogram. The effect of pressure on the eyeball, after injection of atropin or epinephrin, reveals these minute lesions most instructively.

Auscultation Sphygmomanometry.—Barbier discusses the pathogenesis of the zone of murmurs in the auscultation curve.

Archives de Médecine et de Pharm. Militaires, Paris

May, 1921, **74**, No. 5

*Systematized Heliotherapy. Miramond de Laroquette.—p. 451.
Traumatic Shock and Hemorrhage. H. Billet.—p. 473.
Pott's Disease in Adults. Courboulès.—p. 487.
Diaphragmatic Hernia of Stomach from War Wound. Josse.—p. 532.

Systematized Heliotherapy.—De Laroquette gives an illustrated description of the arrangements for heliotherapy at a hospital in Algiers. Amplifying mirrors are used to intensify the sunlight treatment and graduate it at will. A set of from one to fifty of these separately adjustable reflecting mirrors throws the rays on the desired region. This increases by 50 per cent., or more, the concentration of the rays. Veils and screens aid in the graduation. He prefers to use small flat mirrors, set in a square frame, rather than concave reflectors. He gages the dose by the action on a scrap of sensitized paper, and by three thermometers: one is black; one is shiny to reflect the rays, and the third is sheltered from the rays. For a stimulating effect only, the dose is 30 to 45 C. by the black thermometer; the optimum: 38 to 40 C. By these means the treatment is systematic and free from harm, and the results, he says, can be counted on.

Bulletin de l'Académie de Médecine, Paris

Jan. 31, 1922, **87**, No. 5

Discussion on Hygiene of Preparatory Schools.—p. 119. Cont'n.
Silica, Calcium and Magnesium in Cancer Tissue. A. Robin.—p. 128.
Bronchopulmonary Lesions in Influenza. Letulle and Bezançon.—p. 132.
Idem in Present Epidemic of Influenza. Bezançon et al.—p. 136.

Feb. 7, 1922, **87**, No. 6

Influenza in 1918-1919. P. Menetrier.—p. 143.
*Electric Accidents with House Current. A. Zimmern.—p. 155. Id. J. P. Langlois.—p. 158. Id. V. Balthazard.—p. 160.
Prophylaxia of Malaria in Corsica. E. and E. Sergent.—p. 163
Emotivity and Irritability in Aviators. G. Ferry.—p. 168.
Stain Test for Liver Functioning. J. Hatiegan.—p. 170.
Cerebrospinal Reactions in Neurosyphilis. Cestan and Riser.—p. 172.
Subcutaneous Injection of Oxygen in Influenza. R. Bayeux.—p. 176.

Accidents from Domestic Electric Currents.—Zimmern urges that notices should be posted by the electric company in bath rooms and kitchens warning of the dangers of taking hold at the same time of an electric appliance and a water faucet, or taking hold of an electric appliance when in a bath. He cites a recent fatality from this cause, and Langlois adds others to the list, including one woman in a bathtub electrocuted as she took hold of the chain of the electric bell, the current only 110 volts. Four such fatalities are on record from a continuous current of from 95 to 120 volts. Renon reported a similar case, a woman in the bath killed as she pulled the chain of the electric bell, and he relates that he once gave himself a sharp shock by this same means. Balthazard reported the recent case of a boiler maker who climbed into a boiler, holding an electric light in his hand, the current 135 volts. Necropsy showed that death was the result of tetanization of the respiratory muscles in this case, and not of fibrillation of the heart.

Bulletins de la Société Médicale des Hôpitaux, Paris

Feb. 3, 1922, **46**, No. 4

*Renal Diabetes. M. Labbé.—p. 198.
*Calcium Salts in Nephritis. L. Blum, Aubel and Hausknecht.—p. 206.
*Calcium Chlorid in Cardiac Edema. L. Blum and H. Schwab.—p. 214.
*Syphilitic Jaundice. Ardin-Delteil, Derrien and Azoulay.—p. 221.
*Spirochetal Jaundice. M. Villaret, Bénard and P. Blum.—p. 225.
*Serotherapy of Pneumonia in the Elderly. B. Weill-Hallé, R. Weissmann-Netter and P. Aris.—p. 227.
Subcutaneous Injection of Arsphenamin Exposes to Same Accidents as the Intravenous. G. Milian.—p. 232.
*Syphilitic Asthma. A. Sézary and J. Alibert.—p. 242.
Serotherapy in Pneumonia. Courcoux and Deglaire.—p. 248.

Renal Diabetes.—The glycosuria was noted at the age of 6, and is still pronounced in the girl, now 16; there is up to 44 gm. of sugar in the urine daily. This glycosuria is scarcely influenced by the food, but is orthostatic to a slight extent, and there is orthostatic albuminuria, but the sugar content of the blood is normal, and the general health is constantly good. The methylene blue test shows slight impairment of kidney permeability. Labbé cites some authors who have noted a familial trait in renal diabetes; in Salomon's ten cases, five were in two families. No treatment is known, but he suggests that intravenous injections of calcium chlorid might be tried, as this seems to have an antagonistic action to sodium chlorid in respect to the permeability of the kidneys to glucose.

Diuretic Action of Calcium Salts in Nephritis with Edema.—Notwithstanding the fine results realized with calcium chlorid in war nephritis, there seems to be a general disinclination to give chlorids in kidney disease. But Blum and his co-workers declare that calcium chlorid is the most effectual and the most harmless of all diuretics in the edema of Bright's disease. In the instructive cases described, they gave it by the mouth, up to 11 gm. a day. They reiterate that given with a salt-poor diet, it forms the best treatment for nephritis with edema.

Warning Against Calcium Chlorid in Edema from Heart Disease.—Blum and Schwab describe some cases to illustrate that the cardiac factor in edema is usually not influenced by calcium chlorid, while the drug often has a decidedly deleterious action in heart disease when given for some time and it has failed to promote diuresis.

Syphilitic Jaundice in Early Second Phase.—Bile pigment was prominent in the urine but no bile salts were to be found in it in the case described. The test ingestion of a glass of milk showed a positive digestive hemoclasis, thus testifying to insufficiency on the part of the liver. Under mercurial treatment, repose, restriction to a milk diet and hexamethylenamin, the jaundice disappeared in two weeks. It was evidently not a hemolytic jaundice nor jaundice from obstruction while the simultaneous appearance of the jaundice and roseolar syphilids, and their simultaneous subsidence testified to their syphilitic origin. No treatment had been taken for the syphilis, no drugs of any kind, previous to the development of the jaundice.

Spirochetal Jaundice.—The man of 53 had complained for a month of malaise and vague abdominal pains. The first symptom had been a profuse epistaxis, but the fever and

jaundice did not develop until a month later. The case was further distinguished by myoclonic spasms. The man was left exceptionally weak after recovery from the disease.

Serotherapy of Pneumonia in the Aged.—In the eight cases of pneumonia in an asylum for the aged, all recovered but two although several were 78, 80 or 88 years old, and one was both diabetic and a hard drinker. No attempt was made to classify the pneumococcus, 20 c.c. of a polyvalent antiserum being injected subcutaneously, daily or every second day. There was no reaction in any instance, with one exception in which there was a brief rise in temperature and slight urticaria. In one case complicating pleurisy later was given intrapleural injections.

Syphilitic Asthma.—The rebellious asthma developed in a man of 35, and vagotonia and eosinophilia were pronounced when examined after five years of the asthma. Emphysema and enlarged tracheobronchial glands and extensive sclerosis in the lungs finally suggested a possible syphilitic origin. This was confirmed by serologic tests and by the melting away of the roentgen shadows in the lungs, in less than a month, under arsenical treatment, and there has been no return of the asthma during the three months to date, and the Wassermann reaction has veered to negative.

Gynécologie et Obstétrique, Paris

December, 1921, **4**, No. 6

*Biology of the Fetus. L. Bylicki.—p. 541.
*Rupture of the Uterus. H. Fleurent.—p. 544.
Arterial Circulation in Uterine Fibromas. Bardon.—p. 553.
*Rupture of Perifibromatous Varices. E. Weber.—p. 560.
*Artificial Pneumoperitoneum in Gynecology. R. Coliez.—p. 562.

Biology of the Fetus.—Bylicki argues that the fetus swallows amniotic fluid reaching the throat through its nose. He also argues that when the fetal blood for any reason is not getting oxygenated properly, the accumulating carbon dioxid acts on the respiratory center and starts the respiratory muscles to action. The result is that fluid is aspirated into the air passages, but the movements of the respiratory muscles do not end here. The aspirated fluid is expelled by the expiration movements of the respiratory muscles which follow. This explains why we never find fluid pouring from the mouth and nose when the new-born child is held head downward. Daily experience teaches the exceptional rarity of this.

Rupture of the Uterus.—In two of Fleurent's five cases the rupture occurred from a contusion or spontaneous tear, at or near term, and the women recovered after the laparotomy. The uterus was sutured in the contusion case and a normal pregnancy followed a year later. In two other cases the women were practically moribund, unable to stand the indicated hysterectomy, which the family also rejected. In the fifth case the accoucheur had torn a loop of intestine from its mesentery and drawn it out through the vagina. Fleurent advocates a laparotomy at once as the only treatment for partial or complete rupture, suturing the uterus or removing it as required.

Rupture of Varices Around a Fibroma.—Weber had compiled nineteen cases in 1916 and now adds four more to the list. The acute flooding of the peritoneum with blood suggests a tubal abortion. In one case a second vein ruptured after the first had become plugged by a clot.

Artificial Pneumoperitoneum in Gynecology.—Coliez gives a number of sketches showing the displacement of the intern l genitals in the knee-chest and other positions, with the pneumoperitoneum, especially in the ventral, lateral and dorsal Trendelenburg positions, the tube under the table.

Journal de Médecine de Bordeaux

Jan. 25, 1922, **94**, No. 2

*A Case of Gastric Tetany. E. Cassaet and R. C. Augustrou.—p. 39.
*Polycythemia Syndromes. Tamalet.—p. 43.
Potassium Iodid in Pulmonary Tuberculosis. J. Filliol.—p. 46.
*Luxation of Head of Ulna. R. Villar.—p. 47.
*Serotherapy in Erysipelas in Infants. Boisserie-Lacroix.—p. 48.
The Guelpa Treatment of Gout. J. Vergely.—p. 50.

A Case of Gastric Tetany.—In Cassaet and Augistrou's case the woman of 47 had complained for two years of rather severe gastric pains, when intense, intermittent tetany developed, and she died in a few weeks. Necropsy revealed a double epithelioma of the ovary, a pyloric tumor, and several neoplastic nodules of various sizes in or near the liver. Tetany is sometimes regarded as a final symptom, often as very grave, but in any case it obscures the prognosis. Mortality is 69.5 per cent. Tetany being often linked with an old pyloric stenosis, gastro-enterostomy must be attempted as soon as the general condition of the patient permits surgical intervention. Considerable relief followed the gastro-enterostomy in this case; the tetany did not recur after it.

Polycythemia Syndromes.—Tamalet describes the case of a man of 33 with supposed asystolia who was given numerous scarified cupping-glass treatments on the thorax. The progressive improvement noted in the polycythemia did not persist. The syndrome presented by the patient was mistaken for asystolia on account of the chronic pulmonary symptoms, accompanied by cyanosis, dyspnea and enlargement of the liver. Arterial pressure was normal and this should have eliminated at once the hypothesis of asystolia.

Luxation of the Head of the Ulna.—In Villar's two cases, one in a man of 24 while cranking his motor truck and the other in a man of 40 after a fall of 15 meters, the dislocation of the head of the ulna occurred with fracture of the lower third of the shaft of the radius.

Serotherapy in Erysipelas in Infants.—Boisserie-Lacroix describes three cases of erysipelas in infants cured by local applications of antistreptococcic serum.

Nourrisson, Paris

January, 1922, **10**, No. 1

*Habitual Vomiting in Infants. A. B. Marfan and H. Lemaire.—p. 1.
*Desquamating Dermatoses in Infants. G. L. Hallez.—p. 6.
*Artificially Fed Infants. G. Salvetti and S. Segagni.—p. 28.
*Paratyphoid in Infants. G. Blechmann.—p. 38.
*Diphtheria in the New-Born. G. Blechmann and M. Chevalley.—p. 44.
*Typhoid in Infants. G. Salés and P. Vallery-Radot.—p. 51.

Habitual Vomiting of Infants.—Marfan and Lemaire refer to the habitual vomiting which begins in from a few days to three months after birth, the infants vomiting after each feeding of breast milk or other food. After exclusion of all other causes, they had a group of fifty-seven cases, and in this group syphilis was certain in 33 per cent. and probable in the others to a total of 68 per cent. This is the more remarkable as the average of syphilitic infants in the whole service does not surpass 35 per cent. After failure of ordinary treatment, they gave treatment for syphilis, and the children improved at once, and the cure was complete in a month in 63 per cent. of the cases.

Desquamating Dermatoses in Infants.—Hallez remarks that treatment has to rely more on hygiene than on drugs; baths and salves are usually irritating. For internal treatment he advises very cautious epinephrin or thyroid treatment, in small doses, the latter especially when there is intense seborrhea.

Progress of Artificially Fed Infants.—Salvetti and Segagni compared the weight, month by month, of 127 infants of 3 months and over, classifying the breast fed, the bottle fed and the mixed fed. The difference in weight was so slight between these groups that the inferiority of bottle feeding is not demonstrated by this material.

Paratyphoid in Infants.—In Blechmann's two cases, intense diarrhea was the predominant symptom at first. Then came meningitic symptoms, compelling lumbar puncture, the ninth or tenth day. The infants recovered after a twenty-two or twenty-four day course. The fever curve was like that in adults. Agglutination tests were positive with paratyphoid B bacilli and these alone.

Diphtheria in New-Born Infant.—The Schick reaction had been negative in the infant but twelve days later it developed diphtheria with multiple localizations, two days after another infant with what proved to be diphtheria had been kept in a cubicle at the end of the ward for a day. Review of the literature shows the rarity of diphtheria in infants, and that the pseudomembranous form of the disease does not seem to be observed before the age of 7 months. The assumed

immunity of young infants is more likely to be due to their relative isolation than to a transient congenital immunity.

Typhoid in Infants.—In the four cases described, one terminated fatally, and this is the usual outcome in infants less than a year old. The clinical picture is always vague and incomplete, so the diagnosis at first is merely a suspicion from the stupor, the dry red tongue, the continuous fever, and the diarrhea persisting even on restriction to water.

Paris Médical, Paris

Feb. 4, 1922, **12**, No. 5

*Indications for Treatment of Cancer. Rubens-Duval.—p. 85.
Physical Basis of Deep Roentgen Therapy. R. Ledoux-Lebard.—p. 90.
Measurement of Roentgen Rays. I. Solomon.—p. 96.
*Technic for Radiotherapy of Cancer. C. Regaud.—p. 102.
*Radium in Dermatology. J. Barcat.—p. 106.
Radium Treatment of Cancer of Lip. Dubois-Roquebert.—p. 110.
Dosage of Roentgen Rays. M. de Laroquette.—p. 113.

Indications with Operable Cancers.—Duval's personal impression is that deep roentgen exposures offer the best chances for treatment of cancer of the larynx, and he is inclined to believe the same of cancer of the esophagus. He approves of the practice of roentgen exposures preliminary to excision of a scrap of the tumor for examination or partial removal of the tumor. But the roentgen exposures should be given with a technic to spare the skin as much as possible. The surgeon in operating afterward has to refrain from any mechanical or chemical irritation of the skin, and the suturing has to be done with special care in several tiers, and the threads left undisturbed for a comparatively long time. Surgical ablation of a tumor elsewhere is preferable if it is peculiarly susceptible to the rays, as this spares the organism the resorption of large amounts of cell débris. On the other hand, if the tumor is peculiarly resistant to the rays, the effect of radiotherapy is liable to be inadequate. This applies particularly to malignant disease in muscle and fascia. Cancer of bone and joint may persist apparently unmodified after roentgen-ray treatment, when in reality the malignant features of the tumor have been completely exterminated although the bone, cartilage and fibrous tissue forming the tumor have not been resorbed.

Radiotherapy of Cancers.—Regaud warns of dangers to be avoided, especially the wrong way of fractioning and spacing and repeating the doses. He has found that the susceptibility of the cancer to the rays never increases but always grows less and less pronounced, as if the cancer vaccinated itself as time passed. Treatment should aim to strike hard and accomplish the result at one blow or with early repeated blows. On the other hand, the intensity of the reaction increases with the repetition of the exposures, until finally a radionecrosis becomes superposed on the previous clinical picture. The dose must always be the one that will act on the most resistant of the cells.

Radium in Dermatology.—Barcat concludes his long list of nonmalignant skin affections amenable to curietherapy by saying that the roentgen rays accomplish about the same in most of the dermatoses, but angiomas, especially flat ones, usually respond better to radium, as also tuberculous lupus. The various modes in which radium can be applied offer also a more extensive choice.

Presse Médicale, Paris

Feb. 1, 1922, **30**, No. 9

Indications with Cancer of Cervix. Proust and Mallet.—p. 89.
*Lead Poisoning in Making Batteries. F. Heim, A. Agasse-Lafont and A. Feil.—p. 92.
*Asthma and Hemoclasia. J. Galup.—p. 93.

Occupational Lead Poisoning.—This article is the report of a committee which has been investigating lead poisoning among ninety-six persons employed in making storage batteries. Basophile granulation in the erythrocytes and lead in the urine are the most reliable signs of even incipient lead poisoning.

The Digestive Hemoclasis in Asthma.—Galup found the *crise hémoclasique* after drinking a glass of milk, fasting, in 77 per cent. of 114 patients with asthma. He concludes from this testimony that asthma in the majority of cases must be regarded as a manifestation of insufficiency of the liver in its proteopexic function, that is, in its normal modification of the proteins brought to it by the portal vein. The vegetative nervous system gets out of balance in consequence, and then the attack of asthma occurs when this insufficiency is aggravated from any cause, or the amount of proteins is exceptionally large.

Feb. 4, 1922, **30**, No. 10

*Hospital Training in Preliminary Instruction. E. Sergent.—p. 101.

Hospital Training.—This is the inaugural lecture of the newly founded course of medical-clinical propedeutics. Sergent hopes to apply the phonograph to record auscultation and percussion findings so that students can be trained in them by a stethoscope telephone without fatiguing the sick.

Feb. 8, 1922, **30**, No. 11

*Cancer of Uterine Cervix. R. and O. Monod.—p. 113.
*Acquired Immunity to Chronic Disease. H. Dufour.—p. 115.

Treatment of Uterine Cancer.—A case is described in which cancer of the cervix was given thorough radium puncture treatment for about two months, and then the uterus was removed through the vagina. The patient was a woman of 28, and the treatment had been begun two months after the fetid discharge and pain in the pelvis had first attracted attention. The interval was likewise two months in a second case, in a woman of 46. Abdominal panhysterectomy, with resection of part of the vagina, was done in this case. Scraps taken from the uterus during the radium treatment and later failed to reveal any trace of the malignant disease at last. This inversion of the usual operation plus radiotherapy technic has always seemed to reduce the tendency to recurrence and also to reduce the risks of the operation. The sclerous transformation of the tissues under the radium helps to prevent the scattering of cancer cells by the instruments. By the healing over of the ulcerating surface of the cancer under the radium treatment, the secondary infection is conquered, and there is no dread of septic complications, and no need for drainage. The loss of time is trifling; only three weeks in these cases after the close of the radium treatment. From both the clinical and the microscopic standpoint the cure has been complete in the ten and six months to date, as also in the cases reported by Hartmann in 1919, in Fabre's six cases, and in Lascaux' six. The radium treatment alone may be enough, but by following with hysterectomy we not only make assurance doubly sure but we are compiling data of the most instructive character in regard to the effect of radium treatment.

Acquired Immunity to Chronic Disease.—Dufour used a 2 cm. segment of rabbit intestine as a sac to hold paratyphoid bacilli, killed by heat, this sac being buried in the peritoneum of another rabbit. The results of these and other experiments with vaccines have demonstrated, he says, that a vaccination which protects the animal against an acute infection certainly lethal otherwise, does not protect against subacute and slow forms of the same infection against which it had seemed to be vaccinated. A chronic infectious process may develop, but this may be arrested by a supervaccination. He declares that syphilis, typhoid and probably also tuberculosis all pass through this same experience. The acute attack confers immunity against further acute attacks of the same infection, but the infection persists, occult or latent, and, in the course of the chronic changes in the tissues for which the chronic infection is responsible, an intensive vaccine may rout out the infection and cure it completely. The future will reveal the technic for this hypervaccination, he says. Possibly as the acute infection is subsiding might be the preferable moment for it, especially in scarlet fever and typhoid, to ward off complications, and in acute febrile rheumatism to ward off recurrence.

Progrès Médical, Paris

Dec. 17, 1921, **36**, No. 51

The Urine with Gastric Ulcer. E. Palier.—p. 587.
Applications of Radium. Delbet.—p. 588.

Dec. 24, 1921, **36**, No. 52

Painful Crises in Cancer of Esophagus. M. Loeper.—p. 599.
The Pathology of Instincts. Laignel-Lavastine.—p. 603.

Dec. 31, 1921, **36**, No. 53

*Cyst on Nerve Root. L. Lortat-Jacob.—p. 611.

Cyst on Lumbar Nerve Root.—The cyst had induced sciatica, reflex glycosuria and various sympathetic disturbances in the man with pulmonary tuberculosis.

Revue Médicale de la Suisse Romande, Geneva

January, 1922, **42**, No. 1

*Prevalence of Goiter in Jura District. F. M. Messerli.—p. 1.
*Development of Goiter in Children. Id.—p. 12.
Blood Platelet Extract in Prevention and Treatment of Hemorrhage. C. A. Perret.—p. 15.
*Arsphenamin Eruption. J. Golay.—p. 34.
Abscess and Phlegmon in Larynx. G. Frey.—p. 40.
Fracture of Base of Fifth Metatarsal Bone. Guillermin.—p. 45.
Prophylaxis of Diphtheria. L. Exchaquet.—p. 48.

Endemic Goiter.—Messerli comments on the great prevalence of goiter in the families of a certain region while an adjoining region—where the people drink exclusively boiled cistern water—is comparatively free from it. The thyroid shows the tendency to goiter even before the children enter school.

Arsphenamin Eruptions.—The man of 50, a tabetic, developed a severe generalized erythrodermia which lasted for six weeks after a course of arsphenamin treatment, to a total of 2.4 gm. between April 12 and June 4. Golay theorizes that this was the result of toxic action in the blood-producing organs. Resumption of arsenical treatment during the following year brought back the eruption on three separate occasions, with very small doses. The onset in these later recurrences was more in the nature of an anaphylactic phenomenon, as if the blood-producing apparatus had been sensitized by the first, the toxic attack. The eruption lasted for six and four weeks and for six days. During the first attack the eosinophils had numbered from 19 to 32.5 per cent.

Archivio per le Scienze Mediche, Turin

1921, **44**, No. 3-4

*Mechanism of Anaphylaxis. G. Pistocchi.—p. 91.
*Sclerosis of Pulmonary Artery. G. Mattirolo.—p. 124.
*Physiopathology of Blood Pressure. A. Marrassini.—p. 143.
*Fate of Tendon Grafts. A. Busacca.—p. 157.
*Influence of Thymus on Spleen. G. Baggio.—p. 177.
Pneumococcus Infections in 1920. M. Strumia.—p. 188.
*Virus of Epidemic Encephalitis. P. Bastai.—p. 212.

Influence of Spleen, Kidneys and Thyroid on the Production of the Anaphylactic Attack.—In Pistocchi's research on guinea-pigs he was unable to detect any modification of the tendency to anaphylaxis after splenectomy or nephrectomy, but removal of the thyroid had a pronounced effect in reducing the susceptibility to anaphylaxis-producing toxins. This was evident even when the parathyroids were removed with the thyroid.

Primary Sclerosis of the Pulmonary Artery.—Mattirolo adds one more to the nineteen cases of this kind he has found on record. The subjects were usually between 20 and 40. The correct diagnosis had not been made in any instance during life, the symptoms being merely those of failing compensation, except for the extreme cyanosis.

Saline Infusion After Venesection.—The research reported confirms that it is impossible to replace the blood after moderate venesections with 0.7 per cent. sodium chlorid solution. The greater part of the latter soon passes out of the blood stream, and the pressure drops anew.

Fate of Tendon Implants.—Busacca comments on the advantages of using a tendon graft that has had its protein hardened by being kept for a time in alcohol or formaldehyd. This retards the autolysis to which fresh tissue succumbs, while the fibers in the graft stimulate and guide the regenerating elements that in time replace the graft. His photomicrograms confirm the perfect results in his dogs and rabbits.

Influence of the Thymus on the Spleen.—In Baggio's thirty-two thymectomized rabbits the spleen was found abnormally small later in 78 per cent. of the animals. Over 62 per cent. of the animals were unusually small, and over 82 per cent. weighed less than the controls. Other findings, with these, suggest the possibility that the lack of the thymus entails hypotonia of the vagus.

Etiology of Epidemic Encephalitis.—Bastai reports further research on the filtrable micrococciform virus which he has isolated from cases of epidemic encephalitis.

Pediatria, Naples

Feb. 1, 1922, **30**, No. 3

*Is Rachitis a Deficiency Disease? O. Cozzolino.—p. 97.
*Arsphenamin for Syphilis in Young Children. R. Spanò.—p. 115.
*Malta Fever plus Typhoid. V. Tripputi.—p. 129.

Rachitis as a Deficiency Disease.—Cozzolino's review of recent literature and his own experience testifies against the assumption that rachitis is due to a lack of fat soluble vitamin. Cod liver oil in rachitis is undoubtedly useful, but it does not display the almost miraculous effect of the vitamins in infantile scurvy. Another of his arguments is his success in treating rachitis with phosphorus and calcium, without any cod liver oil.

Arsphenamin Treatment of Inherited Syphilis.—In three of Spanò's forty-two cases in young children, the syphilis had been acquired at the age of 4, 7 or 9. In the others it was congenital, and he injected the neo-arsphenamin by the vein in all. He never had any mishaps, but the Herxheimer reaction was always pronounced in the skin lesions.

Malta Fever Plus Typhoid.—The boy of 4 presented typical Malta fever for a week and then typhoid became superposed. Typhoid bacilli could be cultivated from the blood and the micrococcus of Malta fever from the urine. A vaccine for each was used and recovery was soon complete.

Policlinico, Rome

Jan. 23, 1922, **29**, No. 4

Malaria Campaign in Istria in 1920. M. Gioseffi.—p. 113.
Anomaly in Gubernaculum Testis. Antongiovanni.—p. 119.
Colloidal Silver in Treatment of Smallpox. Brancia.—p. 121.
*The Parkinsonian Syndrome. G. Dragotti.—p. 122.

Parkinsonism.—Dragotti's review of recent publications on the parkinsonian symptoms that have developed after epidemic encephalitis, shows nothing promising in the way of treatment. Organotherapy, nerve stretching and radicotomy seem absolutely futile, but palliative relief has been realized with scopolamin, atropin or eserin in some cases. Transient benefit has also followed certain physical measures, such as static and high frequency electric currents. Long hot baths before retiring may also have a sedative action, checking the tremor and stiffness for a few hours, and combating insomnia. Exercising the joints and massaging the muscles may aid in warding off contracture. Rigidity of the muscles is the main disturbance; the tremor may be slight and fleeting. The case histories recorded to date show various outcomes, the course being stationary, progressive or a complete cure in different cases.

Jan. 30, 1922, **29**, No. 5

*The Flakes in Serologic Tests. L. Cacioppo.—p. 149.
*Hypertonic Solution in Treatment of Cold Abscess. I. Ott.—p. 153.
*Rare Complication of Scarlet Fever. Medi.—p. 155.
*Alcohol Plus Acetic Acid for Surgical Use. L. De Gaetano.—p. 156.
Present Status of Abortive Treatment of Syphilis. Levi.—p. 157.

Serologic Diagnosis of Syphilis.—Cacioppo compared the Sachs-Georgi and the Meinicke tests with the Wassermann test, and states that the flakes formed have in themselves no action on the fixation of complement. The flocculation may be as intense with normal serum as with syphilitic serum, but there is no fixation of complement except with the latter.

Hypertonic Saline in Treatment of Cold Abscesses.—Ott used a solution of 5 gm. of sodium chlorid and 0.5 gm. of sodium citrate in 100 gm. of distilled water, in thirty cases of cold abscess, rinsing out the abscess with it and leaving a quantity of the fluid in the abscess. He repeats the procedure every four or five days. The secretions are more like plain water each time, and the healing cavity grows progressively smaller. The cure is complete in from twenty to sixty days, as a rule.

Epididymitis in Scarlet Fever.—Medi had to incise the scrotum over the left testicle in the case reported, the patient a child of not quite 3, at the twentieth day of scarlet fever.

After release of a little pus, the genitals returned rapidly to normal. Both testicles had been enlarged and tender.

Alcohol in Surgery.—De Gaetano is gratified that others are beginning to appreciate the value of 70 per cent. alcohol containing 1 per cent. acetic acid as the most useful disinfectant for surgical use. His earliest publications calling attention to this appeared in 1908—after two years of experience with this method.

Jan. 1, 1922, **29**, Medical Section No. 1

*Meningococcus Septicemia. T. Pontano and E. Trenti.—p. 3.
*Staining Technic for Flagella. G. Petragnani.—p. 30.
*Disease of the Striate Body. G. Artom.—p. 42.

Meningococcus Septicemia.—Pontano and Trenti report the case of a man of 28 with fever of the malarial type, an eruption partly hemorrhagic, partly erythematous, pains in joints and elsewhere, and symptoms suggesting a meningeal reaction, but no actual meningitis. The meningococcus B was cultivated from the blood and from the eruption secretion. The clinical picture was progressive, all the symptoms becoming aggravated at each recurring peak of the fever, and the patient complained of deafness. Cachexia finally became installed and the man died the third month. No effect was observable from polyvalent serotherapy or an autogenous vaccine or injection of milk. The eleven lumbar punctures were always negative from the bacteriologic standpoint.

Staining Technic for Flagellates.—Petragnani describes a method with which he was able to show up from 4 to 30 or more flagella on various bacteria, vibriones, etc., some of them as long as 30 to 40 diameters of the body of the vibrio. These flagella interlace, forming an intricate network between the clustered vibriones. The bacteria, proteus, typhoid and paratyphoid show similar flagella only less numerous and shorter.

Disease of the Striate Body.—Artom reviews the progress in the last few years in our knowledge of the anatomy of and the clinical pictures for which the corpus striatum is responsible.

Riforma Médica, Naples

Jan. 2, 1922, **38**, No. 1

The Teaching of Surgical Pathology. G. Ferrarini.—p. 1.
Improved Sphygmo-Oscillometer. A. Fulchiero.—p. 7.
*Leukocyte Count After Trauma, etc. A. Romani.—p. 9.
*Leg Ulcers. G. M. Nejrotti.—p. 10.

The Leukocyte Count After Operations and Traumas.—Romani quotes conflicting authorities in regard to increase in the number of leukocytes after ether anesthesia, trauma and operations in general. He reports extensive research of his own which has demonstrated that in all these conditions the leukocyte count runs up, possibly in ten minutes, and persists high for five days at longest. As the number of polynuclears increases, the proportion of lymphocytes decreases.

Leg Ulcers.—Nejrotti regards the varicose ulcer as a trophoneurotic lesion secondary to disturbance in the circulation. Treatment should aim to restore normal circulation, and he agrees with those who claim that a bandage exerting even pressure over the entire leg is the best of all measures for this. The leg is wound from the roots of the toes to the lower half of the thigh, and the bandage is renewed every five to ten days. The fact that the patient is up and about as usual is a further advantage.

Archivos Españoles de Pediatría, Madrid

December, 1921, **5**, No. 12

*Tuberculosis of the Eye in Children. F. Poyales.—p. 705.
Hysteria in Children; Ten Cases. S. Cavengt.—p. 725.

Tuberculous Disease of the Eye.—Poyales gives photomicrograms of three cases of tuberculous nodules in the sclerotic, or tuberculous keratitis or iritis. The boy of 9 seemed to be free from tuberculosis elsewhere, and the skin tuberculin test was negative, but the two girls of 11 and 13 had pulmonary tuberculosis. The eye in all three was enucleated, as vision had long been entirely lost. There was a history in two of the cases of a blow on this eye about three years before.

Brazil Medico, Rio de Janeiro

Dec. 24, 1921, **2**, No. 24

*Tetragenus Purulent Infection. Ribeiro da Silva.—p. 363.
Spinal Fluid Control in Syphilis. U. Vianna and A. Mosses.—p. 365.
New Nematodes. I. L. Travassos.—p. 367.

Tetragenus Infection.—The boy of 9 had been having fever and sweats for three weeks when multiple abscesses and pseudocoxalgia developed, and the tetragenus was found in pure culture in the pus. Roentgenography revealed right pachypleuritis, confirming Apert's saying that the tetragenus loves the pleura. After an autogenous vaccine had been administered, there was no further suppuration, but the fever kept up for over a month longer. Then conditions soon returned to clinically normal, even the hip joint functioning.

Dec. 31, 1921, **2**, No. 25

*Rare Causes of Hemoptysis. O. Clark.—p. 375.
*Syphilitic Disease of Lung. J. Barbosa.—p. 377.
Flagellate Parasites. Marques da Cunha and J. Muniz.—p. 379.
Ruptured Tubal Pregnancy. I. C. Madeira and N. Morena.—p. 380.

Hemoptysis of Unusual Origin.—Clark relates that in 1916 two young men were brought to his ward on the same day both bathed in blood from a severe hemoptysis. It proved difficult to arrest the hemorrhage in both cases, and the one with tubercle bacilli died. In the other case the hemoptysis proved to be the only manifestation of unsuspected syphilis. The hemorrhages returned on several occasions until thorough treatment for syphilis had cured the tendency. In another case, the profuse hemoptysis was the result of chronic high blood pressure in the man of 62, who did not drink or smoke, and who was free from syphilis. The heart was much enlarged, but the kidneys seemed normal except for nocturnal polyuria. The hemoptysis evidently prolonged the patient's life, but cerebral hemorrhage finally closed the clinical picture.

Syphilitic Phthisis.—Under this heading Barbosa reports a case of an acute infectious process in the right lung of a man of 47. The acute symptoms yielded to the ordinary measures but the symptoms of a pulmonary lesion persisted, and by exclusion he diagnosed syphilitic phthisis. This assumption was confirmed by the prompt benefit from specific treatment. It is impossible to differentiate these cases by the physical findings. In some recent cases of asthma, specific treatment resulted in the cure of the long rebellious asthma. This group included some cases of asthma in infants. The results in these cases suggest that the benefit from iodid in asthma is probably due to the unsuspected syphilis element in the clinical picture. The spirochetes getting into the circulation might set up anaphylaxis like any other parenterally incorporated protein. In his cases of syphilitic disease of the lungs, no other organs seemed to be affected.

Deutsche medizinische Wochenschrift, Berlin

Jan. 5, 1922, **48**, No. 1

Characteristics of Present-Day Therapy. A. Strümpell.—p. 1.
Constitution in Relation to Therapy. F. Kraus.—p. 5.
The Theory of Chromosomes. O. Hertwig.—p. 9.
Chronic Disorders of Circulation. Goldscheider.—p. 10. Cont'd.
Present Status of Tuberculin Treatment. F. Klemperer.—p. 13.
Operative Treatment of Goiter. O. Hildebrand.—p. 16.
Activation of Arsphenamin Preparations by Metals. W. Kolle.—p. 17.
Treatment of Syphilis by General Practitioners. Jadassohn.—p. 19.
Treatment of Puerperal Fever. A. Döderlein.—p. 22.
Observations of an Ophthalmologist of Long Experience. J. Hirschberg.—p. 25.
Serum Prophylaxis in Measles. R. Degkwitz.—p. 26.
Opium and Its Preparations. D. G. Joachimoglu.—p. 27.
New Remedies. A. Holste.—p. 29.
Displacement of Female Genitalia. W. Liepmann.—p. 30.
The Alcohol Problem in Norway. H. F. Host.—p. 32.

Klinische Wochenschrift, Berlin

Jan. 8, 1922, **1**, No. 2

Foundations of Medical Thought of Today. Martius.—p. 49.
Torticollis and Torsion Spasm. R. Cassirer.—p. 53.
Rectal Administration of Digitalis. E. Meyer.—p. 57.
Antitrypsin in Quartz Lamp Therapy. Koenigsfeld.—p. 58.
Efficiency of Lumbar Anesthesia. R. T. von Jaschke.—p. 60.
Malignant Lymph Gland Affections. E. Grafe.—p. 62.
*Meninges in Infections of Upper Air Passages. Göppert.—p. 64.
Tests for Bilirubin in Blood. Holzer and Mehner.—p. 66.
Mammary Secretion and Mammary Crises in Tabes. Biberstein—p. 68.
Cure of Acute Benzol Poisoning under a Lecithin Emulsion. Nick.—p. 68.

Permeability of Muscle Fibers under Epinephrin. H. Lange.—p. 70.
Elimination of Phosphoric Acid by Retina. Lange and Simon.—p. 70.
Soaps in Relation to Serums. A. Jarisch.—p. 71.
Cortical Epilepsy in Multiple Sclerosis. H. Curschmann.—p. 71.
Indications for Application of Diathermy. Kowarschik.—p. 72.
Treatment of Enuresis. J. Zappert.—p. 75. Conc'n.
Tuberculosis Since the War. Prinzing.—p. 77.

Participation of the Meninges in Acute Infectious Rhinitis and Tonsillitis.—Göppert has been surprised to find the Kernig sign positive in a large proportion of infants and other children with ordinary acute infectious processes in the nose or throat. He accepts this as evidence that the infectious process had involved the meninges more or less. This explains the unusual restlessness or apathy observed in certain cases, and it also warns that, even if the child has apparently recovered, yet it should be spared unnecessary strain for a time. This may ward off the headache and depression that sometimes follow and long persist after an apparently harmless febrile infection in the upper air passages. The Kernig sign will give the clue to diagnosis and treatment.

Medizinische Klinik, Berlin

Dec. 25, 1921, **17**, No. 52

*Mobilization After Surgery of Limbs. A. Bum.—p. 1571.
Vaccine Treatment of Whooping Cough. F. Reiche.—p. 1573.
Delivery with Adherent Myomatous Uterus. Nacke.—p. 1574.
*The Roentgen Rays in Diagnosis. F. Pordes.—p. 1575. Conc'n.
*Ferments in Feces. L. Strauss.—p. 1577.
*Obstetrics of the Emergency Service. E. Runge.—p. 1579. Conc'n.

Mobilization After Fractures.—Bum declares that the first physician treating the fracture, even the first aid procedures, may decide the fate of the limb. Hence he urges that the general practitioner should master the mobilizing-functioning procedures, so as to know how to apply the principle of keeping the broken bone still while the uninjured soft parts and the joint are kept functioning more or less like normal. Immediate mobilization to Lucas-Championnière's extreme he does not approve of, and insists that the strictest individualization is imperative; the age, the site and kind of fracture must be considered in each case. A stirrup and splint arrangement with continuous extension of the limb, which allows the patient to get up early and practice walking on the limb under the physician's eyes, aids materially in consolidation. Recent research has confirmed anew that early static use is a functional stimulus for production of callus. He warns impressively against including sound fingers or other parts in the first dressings applied.

Roentgenography in Diagnosis.—Pordes is assistant in the Vienna roentgen-ray laboratory in charge of Holzknecht, and he outlines the numerous points necessary to bear in mind to make the roentgen-ray examination most efficient and informative.

Ferments in the Stools.—Strauss compared the findings in 220 stool examinations with the findings with the duodenal tube. The ferments vary within a wide range in the stools, even when conditions are apparently identical. But the trypsin and lipase findings in the duodenal juice can be counted on as a reliable index of pancreas functioning. The diastatic ferment findings are less instructive.

Obstetrics at the Emergency Hospital.—Runge here concludes his long study of the various conditions liable to be encountered when a call comes in at the emergency hospital for medical aid at delivery. He has thus described sixty-four more or less hypothetical cases, and the measures indicated in each.

Jan. 1, 1922, **18**, No. 1

*Surgical Treatment of Wounds of Nerves. M. Kirschner.—p. 1.
*Angina Pectoris. R. Schmidt.—p. 6. Conc'n No. 2, p. 36.
Silicic Acid in Treatment of Tuberculosis. A. Kuhn.—p. 9.
*Congenital Syphilis. E. Stransky and E. Schiller.—p. 11.
*Gonococcus Joint and Tendon Sheath Lesions. E. Langer.—p. 13.
*Transfusion of Blood in Anemias. A. Gross.—p. 15.
Epidemic Encephalitis. Hilgermann, Lauxen and C. Shaw.—p. 17.
Acute Gastro-Intestinal Disease in Infants. K. Blühdorn.—p. 18.
Present Status of Physical Therapy. A. Laqueur.—p. 20.

Operative Treatment of Gunshot and Contusion Wounds of Nerves.—Kirschner summarizes his conclusions, from the present condition of the war wounded, in the warning that as long as there are signs of progressive improvement, operative measures are not needed. But progressive impairment in sensory and motor functioning, or pain refractory to conservative measures, as also trophoneurotic disturbances, demand unconditionally operative relief. The prospects of a cure from suture of the nerve are very slight after an interval of three years, and the prospects are zero after a five year interval. Preceding operations that have failed need not deter from operating anew.

Angina Pectoris.—Schmidt analyzes his 121 cases of angina pectoris in the last few years; only 27 were in women, and the age was between 20 and 40 in only 13. The blood pressure was 100 to 120 in 9; 120 to 140 in 17; 140 to 160 in 8; and 180 to 200 in 20. In one case an attack of angina pectoris occurred during roentgenoscopy, and the heart findings showed no modification during the attack. In all the cases the pulse kept regular and full during the attacks and the blood pressure did not drop. He is convinced that the pains start in the aorta; necropsy invariably reveals atheromatosis of the aorta in the angina pectoris cases, while pathologic conditions in the coronaries are extremely variable. The sclerosis of the aorta, especially in cases of syphilitic or gouty origin, is responsible for a neuralgic or neuritic irritation of the aortic plexus. Then, under the influence of some rapid walk, emotion or other stress—in one of his cases, merely swallowing solid food, thus pulling on the aorta—may bring on the attack of angina pectoris, just as chewing may bring on trigeminal neuralgia, or flexing the knee may bring on sciatica. With an aneurysm of the aorta there may be continuous pain like the paroxysmal pain of angina pectoris. This conception of angina pectoris as an aortalgia explains the benefit from treatment as for neuralgia in general, salicylic acid, courses of laxative mineral waters, etc. Nitroglycerin acts more promptly in an alcoholic solution than in tablet form, and he has never witnessed any injury even from long continued nitroglycerin treatment. One of his patients has taken it regularly for four years, before each defecation. The attacks otherwise occur at defecation. It seems to combat also meteorism and flatulence. If there are unpleasant sensations in the head after taking it, the patient had better recline. The favorable action of theobromin preparations is well known; he likes to give them with a little quinin. Pain on pressure of the plexus on the left side warns of impending angina pectoris, and this should always be tested before beginning a course of balneotherapy, especially with thermal waters, when conditions seem to predispose to angina pectoris. Treatment for syphilis is a grateful field; it may be wise to give a little nitroglycerin before the arsphenamin. Cold hydrotherapy, cold compresses or cold packs to the chest around to the axillae, in some cases gave relief more promptly than nitroglycerin. In some cases hot compresses to the precordial region answered the purpose. Cold rubs were liked better by certain patients: one preferred to have ice applied to the back. Overfilling of the stomach has to be scrupulously avoided. In one patient of a gouty tendency, the condition improved materially when only boiled meat was eaten. Carbonated waters often do harm; alcohol and tobacco must be avoided. A small amount of a light beer is often borne well and relished. Under treatment for endogenous constitutional derangement of metabolism, angina pectoris loses much of its gravity. Among his patients are 1 with a twenty year course, 1 with a fourteen, 4 with over ten years, 2 with eight, 3 with six and 1 with a four year course, and all of these were in fairly good condition when last examined. The prognosis is thus much more favorable than with cardiac asthma.

Congenital Syphilis.—The father had acquired syphilis thirteen years before his marriage and had been vigorously treated. The Wassermann reaction had never been positive. The first child had a three plus positive reaction and signs of meningitis developed in the first week, with convulsions. The meningitis subsided under treatment, but a hemorrhagic focus formed a large cyst in the brain, the child dying when 2 months old. The father was apparently entirely cured of his syphilis according to all modern standards, and the mother had never shown any signs of the disease.

Gonococcus Joint and Tendon Sheath Lesions.—In addition to the usual conservative measures, Langer has the

patient exercise the joint actively in a full bath, as this allows the movements to be done without pain. Superheated air has a similar effect, and he usually has a hot air bath of fifteen or thirty minutes follow the full bath of the same length. In the severer cases, this treatment is too strenuous, repose being what seems to be needed. He splints the joint, and gives hot air baths, with stasis hyperemia, beginning with one hour and soon keeping it up for twenty hours. As soon as the fever has dropped, passive and active movements, massage and electricity are begun, as in the other form. The after-treatment is equally important, mud baths, sand baths, diathermy, etc., including heliotherapy. The latter he sometimes applied during the acute phase, and vaccine and protein therapy were invaluable adjuvants.

Transfusion of Blood in Anemia.—Gross ascribes the benefit to the serum which acts like a kind of protein therapy, while the iron in the transfused blood aids in production of new erythrocytes. The best results seem to be obtained with a large transfusion of citrated blood followed by repeated small infusions. Sometimes parenteral injection of iron may stimulate the regeneration of blood after failure of all other measures.

Jan. 8, 1922, **18**, No. 2

*Nephritis. E. Romberg.—p. 33. Conc'n No. 3, p. 67.
Questionnaire on New Epidemic of Influenza.—p. 39. Cont'd.
*Epidemic Encephalitis. H. Pette.—p. 41.
The Purpura Question. H. Full.—p. 43.
Charcoal in Treatment of Dysentery. D. Kling.—p. 46.
Multiple Hydatid Cysts in Liver of Girl. Wohlgemuth.—p. 49.
Diagnosis and Treatment of Intestinal Bilharziasis. R. Hoppli.—p. 50.
Alimentary Intoxication in Infants. K. Blühdorn.—p. 51.
*Official Directions for Arsphenamin Treatment. F. Pinkus.—p. 62.

Nephritis.—Romberg insists on keeping patients with acute glomerular nephritis in bed. At least for two months, is the rule, with hematuria, possibly edema, rise in blood pressure and uremia; even longer in severer cases. The aim of treatment is to spare the kidneys, restricting fluids, salt, protein and acids. He outlines the ration for a day in five small meals, bread, butter, vegetables, fruit, rice or tapioca, all prepared without salt, and only 200 gm. of milk or tea twice a day. The calories total 2,500 or 3,000, the total protein 9.6 gm. and total salt not over 3 gm. Some persons do well on this diet for weeks, but, as a rule, after five days the amount of fluid can be increased to 1,200 or 1,500 c.c. for two or three days, then returning to the kidney-sparing diet, but it should not be kept up for more than a few weeks. When the acute phase is past, a little more salt, fluids up to 1.5 or 2 l. and 100 gm. of meat or fish keep the strength up better. He does not advocate decapsulation, and says that sweating procedures are unnecessary. Only the heart may need a little support in the grave cases. Acute exacerbations of contracted kidney are to be treated in the same way, only he warns emphatically against sweating procedures here. Venesection may be useful in stimulating the water metabolism in impending or established uremia. He has seen 656 cases of arteriolosclerotic contracted kidney in nearly six years, with only 58 cases of glomerular contracted kidney; 74.1 per cent. of the latter were under 40, but only 2.6 per cent. of the former. A tendency to asthma was the first symptom to attract attention to the kidney disease in 25 per cent. of his private patients. Nycturia is manifest after much intake of fluids. Very small doses of digitalis may aid, as also restriction of fluids, lying down twice during the day, regular exercise, and a vacation for a few weeks several times in the year.

Epidemic Encephalitis.—Pette writes from Hamburg to describe six cases of very mild epidemic encephalitis in men and women between 24 and 34, early in 1920. The sickness was very mild in all; in one case there was no interruption of work, but several months later, up to fifteen months, severe parkinsonian symptoms developed and still persist, and the patients seem irritable and listless. He adds that the clinic, the anatomic and the bacteriologic findings seem to confirm that any one who has had epidemic encephalitis has a volcano within him which may keep latent or spread devastation later.

Directions for Use of Arsphenamin.—Pinkus quotes freely from the circular issued by the national public health service, which is distributed with the drug. It warns for extra caution in case of a "cold," sore throat, or stomach upset. With severer disturbances, no attempt should be made to give the drug. A long list of contraindications is given. A warning is also given to be on the alert for by-effects from both arsphenamin and mercury. With recent infection, the Wassermann negative, treatment should begin with arsphenamin. Any disturbances after the injection such as headache, nausea, dizziness, vomiting, sleeplessness, redness of the face, eruption or drop in the usual amount of urine should be reported to the physician without waiting for him to ask. These always call for extra caution; when severe, the next injection should be postponed until a week after the disturbance has completely subsided. A rise in temperature after the very first injection does not call for suspension, but any such rise later in the course warns for extra caution. Pinkus comments that the circular does not warn against hemorrhagic encephalitis. To avoid this, the most scrupulous attention has to be paid to the very slightest signs of nervous irritation. Even the smallest doses may induce it. A hitherto latent meningomyelitis may likewise flare up under a massive dose. There are also liver disturbances to be borne in mind which are liable to develop up to three months after the course, ranging from simple catarrhal jaundice to fatal yellow atrophy of the liver. To ward these off, the diet should be regulated for a long time after the close of the course.

Münchener medizinische Wochenschrift, Munich

Dec. 30, 1921, **68**, No. 52

Transitory, Severe Mixed Cyanosis in New-Born. Göppert.—p. 1673.
Arguments Against the Theory of Vicarious or Supplementary Menstruation. A. Sippel.—p. 1674.
"Doll's Eye" Symptom of Postdiphtheric Paralysis. Widowitz.—p. 1674.
*Fatality from Combined Treatment of Syphilis. Vill.—p. 1675.
Iodism in Drinkers. M. R. Bonsmann.—p. 1676.
Clinical Aspects of Mercury Exanthems. F. Wolf.—p. 1678.
Surgical Scarlet Fever from Sucking of Thumb. R. Bloch.—p. 1679.
*Bone Typhoid Process as Source of Epidemic. P. Michaelis.—p. 1679.
*Treatment of Epidemic Singultus. H. Reh.—p. 1680.

Fatality After Combined Treatment of Syphilis and Gonorrhea.—Vill reports two cases of syphilis plus gonorrhea in young women who were given a combined salvarsan, mercury and collargol treatment. Both developed hemorrhages in the skin and mucosae, and the blood count revealed severe injury of the blood marrow, with fatal outcome in less than two months. The syphilis was in the second stage, with skin eruptions in both.

Typhoid Bone Process as Source of Epidemic.—The typhoid osteomyelitis in the ulna of the working man secreted profusely, and the small epidemic of typhoid in the environment is ascribed by Michaelis to contagion from this source.

Treatment of Epidemic Singultus.—Reh has found a 0.4 per cent. solution of cocain efficacious in the treatment of persistent singultus. In two cases excellent results were secured after the administration of 1 teaspoonful; in a third case there was a slight attack after the second dose of cocain, but after the third teaspoonful the attacks ceased. Reh regards this treatment as the most practical known. All three patients were men between 30 and 40 years old.

Wiener klinische Wochenschrift, Vienna

Dec. 15, 1921, **34**, No. 50

Tuberculosis of Spleen, with Tubercles in Brain. F. Drebschok.—p. 603.
*Length of Intestine in Relation to Height. K. Jellenigg.—p. 604.
Laryngeal Manifestations in Syringomyelia. Weisshappel.—p. 605.
Gallstones and Cancer of the Gallbladder. F. Marchand.—p. 606.

Length of Intestine in Relation to Sitting Height.—Jellenigg raises objections to Pirquet's findings by which he establishes the relation of the sitting height to the length of the intestine as 1:10. In thirty-six measurements that he conducted on children from 10 to 12 years old he found that the average relation between the sitting height and the length of the intestine was 1:11.9; that is, practically 1:12. There were, moreover, very marked fluctuations of the proportion in different individuals. The minimum was 1:8.2 and the maximum was 1:15.6. Jellenigg regards it, therefore, as unjustified to set up any generally accepted norm as expressive of the relation between sitting height and length of intestine, and still more unjustified to endeavor to determine on the basis of such relation the extent of the resorbent surface of the intestine.

Zeitschrift für Tuberkulose, Leipzig

January, 1922, 35, No. 5

*Allergy Versus Anergy. E. Szász.—p. 321.
*Tuberculosis plus Other Diseases. B. Hirschowitz.—p. 327.
Disinfection of Tuberculous Sputum. J. Schuster.—p. 342.
History of Inhalation of Alternating Hot and Cold Air in Treatment of Tuberculosis. C. Schelenz.—p. 344.
Specific plus Unspecific Treatment in Tuberculosis. A. Mayer.—p. 346.
Tuberculous Infection in School Age. I. Ivancévic and Max Pinner. —p. 351.

Allergy.—Szász insists that allergy is exclusively a property of the cells. The substance which, retained in the cell, injures the cell, is the curative agent when it gets into the body juices. The blood stream is only the vehicle. The cells undergo some change when an antigen is introduced. They thus defend themselves, and this defensive change is manifested in the Pirquet tuberculin skin reaction. This is allergy. If the defensive reaction is inadequate, symptoms follow, possibly including fever. Fever is thus the exact opposite of allergy, and a febrile reaction to tuberculin indicates the more or less complete inadequacy of the defensive forces.

Relations Between Tuberculosis and Other Diseases.—Hirschowitz' figures from five years of necropsies at Prague show that tuberculosis was responsible for 49 per cent. of the 4,538 deaths. Active cancer was found in 4 of the 944 tuberculosis deaths, but different organs were always involved, as also in the total 174 cases (8.4 per cent.) in which carcinoma was accompanied by tuberculosis. There were 161 cancer cases without signs of tuberculosis (10.1 per cent.). The statistics cited from various European states confirm the conclusions from this Prague material to the effect that the lower the tuberculosis death rate, the higher the cancer death rate, and vice versa. The death rate from tuberculosis in 53 subjects with kyphoscoliosis was far below the general average. The more pronounced the kyphoscoliosis, the greater seems to be the resistance to tuberculosis. Tuberculosis was found associated with a heart defect in 7.67 per cent. of the total 2,243 tuberculous cadavers; with nephritis in 15.51 per cent.; with cirrhosis of the liver in 1.87; with syphilitic aortitis in 4.81; with carcinoma in 7.76; with gastric ulcer in 4.9, and with kyphoscoliosis only in 1.53 per cent. The experiences related confirm the traditional view that a mitral defect seems to favor the biologic healing of a tuberculous process. The extra amount of blood in the lung tends to promote the healing of the tuberculous lesion. This is probably the explanation of the low death rate also with kyphoscoliosis, with or without other manifestations of rachitis.

Zentralblatt für innere Medizin, Leipzig

Nov. 26, 1921, 42, No. 47

Experimental Pulsus Pseudoalternans. P. Engelen.—p. 906.

Casopsis lekaruv ceskych, Prague

Jan. 7, 1922, 61, No. 1

*Pathogenesis of Icterus of the New-Born. F. Luska.—p. 1. Conc'n No. 2, p. 26.
*Excretion of Indigo Compounds by Human Urine. E. Sieber.—p. 6.

Icterus Neonatorum.—Luska finds in a study, based on 120 cases, that the icterus of the new-born usually begins by a hemoglobinemia on the second to the fourth day after birth. Hemoglobin was seldom found in the urine. In a number of cases hemolytic staphylococci were found in blood and sometimes in the granuloma of the navel and in the feces. In eleven cases a hemolytic agent closely resembling staphylolysins was present in the serum. A rise in the antistaphylotoxic titer of the serum was evident in all cases. The author concludes that the icterus of the new-born is due to a bacteriotoxic hemolysis, which was in his cases caused by hemolytic staphylococci.

Excretion of Indigo Compounds.—Crystals and amorphous pieces of indigo were found in the urine and tubuli of kidneys in a case of gastro-enteritis and pyelonephritis. A case of cancer of the stomach with liver metastases excreted a considerable amount of indigo red, while Jaffé's indican test was negative.

Jan. 14, 1922, 61, No. 2

*A Rational Method of Getting a Strong Hemolytic Amboceptor. G. Kabrhel.—p. 21.

Jan. 21, 1922, 61, No. 3

Acute Appendicitis Suggesting Subacute Ileus. A. Jirásek.—p. 41.
Sarcoma of the Larynx. K. Greif.—p. 43.
A Simple Apparatus for Raising Heel of Pes Varus. J. Hanausek.—p. 46.
Connection Between Disease of Nose and Accessory Cavities and Diseases of the Eye. V. Guttmann.—p. 48.

Jan. 28, 1922, 61, No. 4

Intestinal Volvulus. Zahradnicky.—p. 62.
Principles of Specific Treatment of Tuberculosis. J. Jedlicka.—p. 67.
Determination of Blood Pressure. J. Blatny.—p. 72.

Preparation of Hemolytic Amboceptor.—Very small doses of corpuscles (0.5 c.c. of a 5 per cent. emulsion) were injected intravenously at long intervals (three to eight weeks).

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Dec. 3, 1921, 2, No. 23

Mixing of Races in Middelburg. J. J. Wap.—p. 2777.
*Orientation Illusions in Moving Train. M. E. Mulder.—p. 2785.
Peanut Kernel from Bronchus of Infant. C. E. Benjamins.—p. 2788.
Medical Folklore. M. H. Cohen.—p. 2795.
*Treatment of Insanity in Former Centuries. H. Breukink.—p. 2806. Cont'd.

False Estimation of Direction in a Moving Train.—Mulder discusses the estimation of vertical and horizontal when a moving train stops suddenly.

Treatment of Mental Disease in Former Centuries.—Breukink reproduces ten more cuts from works dating from the sixteenth and later centuries. Some of them show a group of insane and epileptics being marched to some shrine or mineral spring or river deemed to have a curative action. Other prints show a quack digging out a stone from the brain.

Hospitalstidende, Copenhagen

Jan. 25, 1922, 65, No. 4

*Capacity of the Lungs. C. Lundsgaard and K. Schierbeck.—p. 49.

Capacity of the Lungs.—The capacity of the lungs in twenty-seven normal persons between 19 and 36 was repeatedly tested to determine the normal standards. The findings are compared with pathologic cases, and the results are interpreted as throwing light on the functional capacity of the balance of the lung in case of disease. The extremes of the vital capacity in the twenty-seven normal subjects ranged from 2.20 to 5.85; the residual air in these two extreme cases from 0.88 to 1.97; the total volume, from 3.08 to 7.82; the average capacity, from 1.88 to 4.89.

Svenska Läkaresällskapets Handlingar, Stockholm

Dec. 31, 1921, 47, No. 4

Philippe Ricord, 1800-1889. J. Almkvist.—p. 97.
*Prophylaxis of Tuberculosis. C. Flügge (Berlin).—p. 106.

Prophylaxis of Tuberculosis.—Flügge argues that the reduction in the death rate from tuberculosis is only deceptive progress, as the number of the mildly infected is constantly increasing and the sources of contagion are thus being multiplied. He declares that progress can be realized only by attacking the problem as affecting the entire people, raising the level of the general health on the one hand, and isolating all sources of contagion on the other hand.

Ugeskrift for Læger, Copenhagen

Feb. 2, 1922, 84, No. 5

*Otitis Complicating Scarlet Fever. K. Salomonsen.—. 121.
Gibbus with Tuberculous Spondylitis. R. Hertz.—p. 133.
Principles for Making Artificial Limbs. E. Nyrop.—p. 136.

Scarlatinal Otitis.—The treatment of scarlatinal otitis at the Blegdamshospital is the same as for otitis of other origin, only with greater haste to apply operative measures on account of the more destructive nature of the scarlet fever process. As soon as the mastoid is tender and infiltrated, it is opened up, as likewise when the temperature fluctuates, running up to 38 or 39 for a few days and then back to normal for a few days, even if nothing certain can be discovered in the ear or mastoid. A discharge from the ear persisting for six or eight weeks is likewise an indication for opening up the mastoid, after exclusion of other causes. In fifty cases of scarlatinal otitis given operative treatment, the intervention was bilateral in eight cases. Except for one patient who already had sinus thrombosis, none of these patients died.

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